Report to Governor Ralph S. Northam and the Virginia General Assembly on Executive Order Number Seventy-Seven

Secretary of Natural and Historic Resources

December 17, 2021

I. Introduction

A growing population and a booming economy present significant solid waste management challenges for Virginia. Since 2011, solid waste disposed at landfills and incinerators in Virginia has increased from 21 million tons to nearly 23 million tons per year. At the same time, many recycling programs in the Commonwealth have curtailed or ceased operations since China stopped importing U.S. recyclables in 2018.

Landfills or incinerators subject to strict environmental standards are the best option for waste that cannot currently be reused, recycled, or composted. Such facilities, no matter how strictly regulated, can have negative environmental and social impacts on nearby communities and siting often raises environmental justice issues. Therefore, it is critical that the Commonwealth focus on reducing its disposal of solid waste and diverting as much waste as possible from landfills and to beneficial reuse.

Single-use disposable plastic items are a particularly pervasive solid waste challenge. Plastics are the most common type of marine debris in our ocean and along our coasts and pose a severe and growing threat to fish and wildlife and to the health of the Chesapeake Bay. In 2019 alone, volunteers collected more than 12,000 plastic bags and 13,000 plastic bottles, in addition to many other types of marine debris, from Virginia's coastline.

A new report from the National Academies of Sciences (NAS) has identified the United States as the top global generator of plastic waste, generating a total of 42 million tons of the 242 million tons generated worldwide.[1] Of that total, NAS estimates 8 million tons enters the oceans each year. The report said that so much plastic waste is flowing into the ocean worldwide that it is equivalent to dumping a garbage truck of plastic into the ocean every minute.

It is within this context that Governor Ralph S. Northam issued Executive Order Seventy-Seven: Virginia Leading by Example to Reduce Plastic Pollution and Solid Waste.[2] As a large producer of solid waste, the Commonwealth must lead by example and phase out its use of plastics and polystyrene items in favor of better alternatives. The Commonwealth must also significantly reduce the amount of solid waste it sends to landfills and incinerators, and work with the private sector to do the same.

The order puts the Commonwealth on a path to eliminate most single-use plastics at state agencies, colleges and universities, imposing a near-term ban on several common, but unnecessary disposable plastics and requiring the phase out of other items by 2025. Executive Order Seventy-Seven also directed the Secretary of Natural and Historic Resources to develop recommendations for reducing solid waste and divert such waste from landfills through composting, beneficial reuse, enhanced recycling, and other strategies.

II. Plastic Pollution and Solid Waste

Plastic pollution is a problem that recycling alone with not solve. Even with companies and governments making commitments to reduce plastic pollution, at least 22 million tons of plastic waste will enter U.S. waterways over

[1] https://www.nationalacademies.org/news/2021/12/u-s-should-create-national-strategy-by-end-of-2022-to-reduce-its-increasing-contribution-to-global-ocean-plastic-waste-says-new-report

[2] https://www.governor.virginia.gov/media/governorvirginiagov/executive-actions/EO-77-Virginia-Leading-by-Example-to-Reduce-Plastic-Pollution-and-Solid-Waste.pdf

the next 10 years. With no improvements at all, and the waste management we have in place today, 99 million tons of plastic waste would end up in the environment by 2030.[3] All of the things that make plastic so versatile also make it problem in the environment – because of its durability, it is virtually indestructible. Plastic production has increased steadily since the 1950s and seven billion of the 8.8 billion tons of plastic produced by 2017 became waste. Most plastic does not biodegrade, so this problem will not go away. Even when plastic does break down into smaller pieces, it becomes more problematic and more difficult to remove from the environment. Addressing plastic pollution will require a fundamental shift in how people make, use and discard plastic.

According to the U.S. Environmental Protection Agency's (EPA) most current nationwide data, the recycling rate for plastics is relatively low (8.7 percent). The rates for certain types of plastics was relatively higher, but still nowhere near sufficient, with polyethylene terephthalate (PET) plastic bottles and jars at 29.1 percent and high-density polyethylene (HDPE) plastic bottles at 29.3 percent. In 2018, about 4.2 million tons of plastic bags, sacks and wraps were generated, while only 0.42 million tons were recycled, 0.74 million tons were combusted with energy recovery and 3.04 million tons were landfilled. The recycling rate for plastic bags, sacks and wraps was 10 percent in 2018.

Landfills can be associated with pollution risks to soil, air and water as well as odors and increased traffic from heavy trucks loaded with landfill-bound waste. Unless properly constructed, maintained, and monitored over a long period, landfills can leak highly contaminated leachate into the groundwater and possibly emit air pollutants. Based on the Department of Environmental Quality's (DEQ) reporting data, Virginia's permitted solid waste management facilities received a total of 22,530,150.85 tons of solid waste during calendar year 2019. Of this total, 74 percent originated in the Commonwealth and 26 percent from other jurisdictions. The total amount of solid waste received increased by 3.32 percent compared to 2018.

The amount of waste coming to Virginia landfills has been increasing. At the same time, the remaining lifespan for Municipal Solid Waste (MSW) landfills is decreasing. In 2018, MSW landfills were predicted to have 23.4 years of capacity remaining; however, one year later, that predicted capacity had dropped to 20.6 years. New data recently published shows a small rebound in capacity in 2020 compared to 2019. Virginia wants to extend the life span of existing landfills through waste reduction and diversion as opposed to building new landfills. Constantly increasing waste disposal and building new landfills is not sustainable. The recently created Waste Diversion and Recycling Task Force is tasked with examining Virginia's status as a prime destination for out-of-state waste and exploring ways in which it can be diverted from Virginia's landfills. Virginia State Agencies and Institutions are working to reduce waste generation and lead by example.

III. Review of EO-77 Requirements

EO-77 applies to all executive branch state agencies under the authority of the Governor, including state institutions of higher education, and their concessioners. Other branches and independent agencies are encouraged to participate in complying with the requirements of the order and offered the same support that DEQ provides to other executive branch agencies. Concessioners, franchisees, and other contractors operating on state owned or leased property are also covered by the EO. DEQ was charged with developing guidance and tools for implementation of the order.

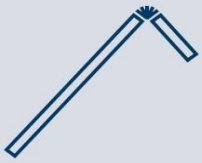
[3] General Guidance and Recommendation, Executive Order 77, Virginia Leading by Example to Reduce Plastic Pollution and Solid Waste, Virginia Department of Environmental Quality, June 21, 2021.

After July 21, 2021, agencies and institutions shall discontinue buying, selling, or distributing disposable plastic bags, single-use plastic and polystyrene food service containers, plastic straws and cutlery, and single-use plastic water bottles. Descriptions of these items are in the table below.

Agency implementation requirements are broken into three parts with an additional requirement to submit information documenting planning and progress:

1. First, is the immediate cessation of the buying, selling, or distribution of disposable plastic bags, single-use plastic and polystyrene food service containers, plastic straws and cutlery, and single-use plastic water bottles by July 21, 2021.
2. Second, is the phase-out of all non-medical single-use plastic and expanded polystyrene items over a period of 4 years with alternatives that are reusable, compostable, or recyclable.
3. Third, is the creation of an agency plan identifying needs and opportunities for reducing all solid waste from agency operations and diverting waste from landfills. This includes identifying environmentally friendlier plastics, such as compostable plastics and plastics with high levels of recycled content, for any plastics still being used.
4. The 2021 Virginia State Agency Plastic Pollution and Solid Waste Reduction Plan template developed by DEQ incorporates all of these parts into a single plan, which when completed and submitted to DEQ meets the requirement to submit information on planning and progress. Agencies are required to provide an annual plan update and progress report to DEQ by July 1 of each year.

Compliance with EO-77 is designed to be flexible and DEQ is committed to providing technical assistance, convening experts, and sharing best practices and other resources to help state agencies achieve the Commonwealth's plastic pollution reduction goals. Order implementation and agency

Item	Description	Alternatives
Disposable plastic bags 	**Examples include but are not limited to:** • Shopping bags • Garbage can liners/garbage bags of any size **The following items are not part of the EO:** • Durable plastic bags with handles that are specifically designed and manufactured for multiple reuse and that are at least four mils thick • Plastic bags that are solely used to wrap, contain, or package ice cream, meat, fish, poultry, produce, unwrapped bulk food items, or perishable food items in order to avoid damage or contamination • Bags that are used to examine, collect and store evidence for criminal and regulatory cases • Bags used for laboratory collection, storage and testing • Bags used to collect regulated medical waste (red-bag waste) • Pet waste bags	• Reusable containers. • Reusable bags: o Washable bags made of natural fibers o Thick bags designed for reuse. Look for options containing a high percent of recycled content
Single-use plastic and polystyrene food service containers 	**Examples include, but are not limited to:** • Plates, cups, bowls, trays and hinged containers. • Containers of food or beverage prepared for consumption on or off a food vendor's premises, using any cooking or food preparation technique. *Note: Prepackaged food and beverages (other than water) purchased for resale is included in the phase-out.*	Containers that are reusable or compostable. Note: Recyclable containers are not an acceptable alternative.
Single-use disposable plastic straws and cutlery 	**Examples include, but are not limited to:** • Straws • Forks • Spoons • Knives • Stirrers	• Reusable straws and cutlery (even those made of plastic) • Compostable straws and cutlery
Single-use plastic water bottles 	**Includes bottles up to and including 34 ounces.** *Note: Single-use plastic bottles containing other liquids – like soda, juice, flavored or sparkling water – are included in the phase-out, which requires alternatives to be reusable, recyclable or compostable.*	• Refillable water bottles • Tap water • Water bottle filling stations • Paper or aluminum containers

compliance is explained in more detail in a guidance document released by DEQ on June 21, 2021, and regularly updated on DEQ's website.[4] The compliance pathways are designed for maximum flexibility for state agencies. This includes processes that allow state agencies to claim exemptions for certain single-use items that are for public safety, public health, or medical use. Agencies determine which items to claim for a public health and safety extension or a medical use exemption and must simply provide DEQ with a written explanation as to why they have chosen an exemption for that item. Additionally, the definitions provided in the DEQ guidance document provide additional flexibility by clarifying which types of plastics are single-use and which are not and therefore not covered by parts 1 or 2 of the Order as described above.

IV. EO-77 Implementation

For decades, DEQ's Office of Pollution Prevention (OPP) has supported initiatives that minimize environmental footprints. OPP's programs focus on efficient use of resources and preventing pollution before it is created, which lead to a cleaner environment and often costs savings. Recently, OPP has specifically focused on leading the greening of state government, by providing information on best practices for recycling programs and input on developing signage and informational materials.

With the signing of EO-77, DEQ's efforts shifted to assisting executive branch state agencies and institutions with implementation and compliance with the order's requirements. DEQ has developed guidance and a Plastic Pollution and Solid Waste Reduction Plan template for state agencies and institutions to use to comply with EO-77. In addition to the guidance and template, OPP has hosted multiple EO-77 Virtual Office Hours to get feedback and answer questions from stakeholders. Numerous meetings have also been conducted with individual agencies that needed additional guidance or had unique circumstances with which they needed assistance. DEQ has developed webpages with guidance and resources to raise awareness about the EO for the public and for state agencies. To support the flexible compliance pathways for state agencies, DEQ leadership has processed dozens of extension concurrence requests. To date, DEQ has received over 100 Plastic Pollution and Solid Waste Reduction Plans covering almost 100 percent of state employees. It is evident that a lot of work and planning went into the completion of the plans. OPP is currently in the process of doing a completeness check on each plan submitted and plans to provide more in-depth feedback in 2022 that agencies can use in the development of their subsequent plans.

Through EO-77 implementation, state agencies are identifying and driving demand for sustainable products that are environmentally preferable as compared to single-use plastics while simultaneously supporting and growing Virginia's circular economy and recycling and composting infrastructure.

V. EO-77 and the Future of Plastics

Plastic pollution is one of the most challenging environmental problems of our lifetime, with significant impacts on our oceans and coasts.

Most types of plastic are not easily or economically recyclable, and because they are not biodegradable, they often end up as litter on land and in waters. As noted above, according to the EPA, less than nine percent of plastics are recycled in the United States.[5]

[4] https://www.deq.virginia.gov/home/showpublisheddocument/9664/637601348500700000

[5] https://www.epa.gov/sites/production/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf

Plastic's lightweight and recyclability may be viewed as making plastic a preferred alternative to other types of materials. PET plastic is the most common plastic material used in many of the single-use items prohibited by the order as it is used in food packaging, plastic bottles, and household containers. While PET may be viewed as a valuable recyclable commodity, the recycling rate is low. A recent report from Ball Corporation shows that only 10 percent of PET bottles are recycled in Virginia, compared to nine percent of all rigid plastic containers.[6] Voluntary efforts at recycling are not sufficient to match the scale and the scope of the waste generated by plastics. Governor Northam committed to phasing out single-use plastic water bottles and several other items at Virginia state agencies because there are less environmentally damaging alternatives, and because as a large producer of solid waste, the Commonwealth can lead by example and transition away from single-use disposable plastics to create a cleaner, more sustainable future for all Virginians.

Just because a container can be recycled does not mean it will be, and recyclable does not mean the same thing as reusable. The data shows that consumers see recyclable items as disposable. Focusing on reducing consumption of these items and employing reusable containers instead of disposable ones is the most effective strategy to keep plastic out of our environment and ease the burden on our landfills. As the old adage says: refuse, reduce, reuse, and then recycle.

DEQ continues to work closely with state agencies to implement EO-77 and welcomes the engagement of industry, local governments, and other stakeholders to implement innovative approaches to ensuring that any recyclable alternatives used by state agencies to comply with the order are part of a sustainable circular economy.

EO-77 is already having an impact beyond state agencies, demonstrating that by leading-by-example, state government can have an impact beyond the walls of our agencies. This also provides opportunities for local governments, businesses, and others to leverage the state's work for their own plastic pollution prevention efforts.

The state's shift to the use of more sustainable alternatives to single-use plastics can have a significant impact in raising public awareness and encouraging private sector action. For example, there are approximately 120,000 state employees, but the number of people that interact with these agencies (such as the more than 375,000 students in state colleges and universities) is much greater. Some of the largest stadiums in Virginia are affiliated with state colleges and universities; the five largest alone have a capacity of over 200,000 people. Information about sustainability topics such as circular economy, recycling, and composting could be distributed virtually to attending fans and shared at events so that these concepts are introduced and reinforced through each game, concert, and special event - increasing the scope of the state's impact.

Further, as municipalities and private companies become aware of the Commonwealth's shift toward purchasing sustainable products, the tools and resources developed by DEQ could be made available for use by other entities. All of the EO-77 webinars hosted by DEQ were open to the public, and staff noted that many had attendees from local governments, the private sector, and non-governmental organizations. Some examples that demonstrate EO-77's impact are below:

- Fairfax County recently drafted the "Fairfax County Government and Schools Zero Waste Plan", which aims, by 2030, to divert 90% of waste from disposal and reduce the overall waste generated by 25% from 2018 levels. The plan will go before the Board of Supervisors in early 2022. The plan references the

[6] https://www.ball.com/getattachment/na/Vision/Sustainability/Real-Circularity/Final-50-States-of-Recycling-Short-Presentation.pdf.aspx?lang=en-US&ext=.pdf

state's shift to sustainable products a number of times and states, "The state's leadership on this issue should help facilitate the county's transition to Zero Waste."

- DEQ was contacted by Accenture, a Fortune Global 500 company with one of its U.S. hubs located in Arlington. In October, 2020, the company announced new commitments to sustainability, including setting industry-leading net-zero emissions, moving to zero waste (including the elimination of single-use plastics) and planning for water risk. DEQ and Accenture staff have communicated and plan to share successes and challenges related to finding sustainable products.

- Prince William County shared some of the changes they have made within their Fleet Services Division to reduce their reliance on single-use plastic products. These include the purchase of an overhead hose reel system to deliver oil, transmission fluid and antifreeze from bulk storage tanks, eliminating the use of plastic quart bottles; the County estimates the system eliminates more than 23,000 quart containers/year and saves between $40,000 and $50,000/year.

- National brands that have a presence on state campuses, such as Starbucks, Panera and Chick-fil-a, are moving toward sustainable products too. Their changes in Virginia serve as a template for companywide change and are accelerating existing corporate efforts – encouraging these companies to go farther, faster.

VI. EO-77 Implementation – State Agency Examples

Some examples of state agency success stories are listed below. DEQ's website will be frequently updated with more stories from state agencies as they become available.

Department of Environmental Quality

Over the past several years, in celebration of Earth Day, DEQ has given each employee a reusable dining item for use in the office, especially at staff events where food is served. Each new employee is given a set that includes the plate, bowl, cup and utensils, each of which say "Earth Day Everyday"; staff are reminded to bring them to events where food is being served, such as service and employee award ceremonies. This has resulted in the need for fewer disposable food ware items to be purchased by both the agency and the Employee Association. DEQ's Environmental Management System Team is considering additional waste reduction steps to take in relation to food ware, including having a supply of reusable items on hand for staff to borrow as needed.

George Mason University

Bottled water became only be available in aluminum cans at George Mason University (GMU) starting July 2021. Mason worked with Coca-Cola to confirm the elimination of all single-use plastic water bottles to meet EO-77's July 21 cessation of use deadline. This is another success for the Mason Sustainability Council's Circular Economy + Zero Waste Task Force, co-chaired by the Office of Sustainability and Business Services. The task force's first priority is institutional EO-77 compliance. They are developing holistic solutions to reduce pollution and solid waste by creating "better alternatives" procurement resources to improve source reduction, integrating reusables into campus operations and building partnerships with industrial composters and organizations focused on zero waste and resource responsibility.

James Madison University

James Madison University (JMU) Dining's sustainability goals are to increase sustainable food purchasing, to educate and empower the University and local communities and to reduce their environmental footprint. They have developed a number of long-term environmental stewardship programs and policies covering a variety of areas, including responsible procurement and waste stream management that are called Green Thread as they weave throughout the business operations. Relevant to EO-77, JMU Dining currently composts all pre-consumer waste in dining locations and all pre- and post-consumer waste in residential dining operations, recycles 100% of used fryer oil, strives to prevent food waste by analyzing inefficiencies, donates reusable, leftover food to a local before and after school program and offers reusable to-go containers at some dining locations as they have the ability to completely oversee their washing and sanitization.

University of Virginia

The University of Virginia (UVA) is transitioning to a centralized trash and recycling model to significantly reduce the number of small, individual office trash can liners. The transition is approximately 43 percent complete on the academic side of UVA and will continue over the coming months. The traditional custodial model is that every office and classroom has a trashcan. The housekeeping staff then unlock private offices at the end of the day to empty trash. This takes time but also wastes trash bags. UVA has had an "opt-in" program for years where individual trashcans are removed from offices and replaced with a small desktop bin that office users empty themselves. In some cases, entire buildings have bought into this program; now UVA is going to require appropriate buildings to participate. EO-77 has expedited the time frame of this initiative. The office user is responsible for not only taking out their trash, but recycling as well. The centralized trash system makes users think about which bin their material should go in so less goes into the landfill. Trash bins in buildings that have made the switch are labeled "landfill" instead of "trash" to get users to think about what and how they are discarding material. UVA is significantly expanding its composting infrastructure and education, building upon the UVA Zero Waste Events Guide and major zero waste events, such as the Alumni Association's reunions in 2019 and Game Day Challenge Green Games.

Virginia Tech

Building on the university's reputation of intentional sustainable operations, Virginia Tech has formed a cross-campus working group that focuses specifically on the implementation of EO-77. Among consideration, and to supplement the university's previous sustainability commitment of eliminating the use of all polystyrene food containers within internal VT Dining Services operations, the working group is reviewing additional opportunities to reduce single use plastics such as cutlery, straws and containers. The university is also currently reviewing student proposals for its annual "Green RFP" program to bolster the potential implementation of sustainable alternatives that will enhance the university's EO-77 implementation plans.

Department of Conservation and Recreation

Virginia State Parks has been working to reduce single-use plastic and other single-use items for a number of years. With so many visitors planning to hike in the parks, having access to water is critical and potentially a safety issue. After research, the agency found the Just Water product, which uses plant-based packaging; bottled water previously sold in park gift shops and camp stores has been replaced with this product. In addition, water bottle filling stations have been installed, and visitors are encouraged to bring their own reusable bottle or to purchase one at the park as a way to reduce waste. Water is only one of State Parks' target areas; they have sourced other reusable products for their gift shops and camp stores such as reusable utensils, reusable dishes, reusable coffee filters and reusable hot and cold drinking cups.

VII. Overview of Solid Waste Data

EO-77 directs that this report include recommendations for actions necessary to ensure the Commonwealth not exceed the capacity of existing landfills and incinerators. Meeting this goal requires a detailed understanding of the solid waste management ecosystem in Virginia and of how capacity measures affect permitting decisions. The following information is provided to help assist policymakers make data-driven waste management policy and permitting decisions.

According to the 2021 Annual Solid Waste Report for CY2020 prepared by DEQ, Virginia's permitted solid waste management facilities received a total of 22,505,326.75 tons of solid waste during calendar year 2020.[7] Of this total, 16,829,472.76 tons originated in the Commonwealth and 5,675,853.99 tons originated from other jurisdictions. Municipal solid waste (MSW) constituted 14,321,452.83 tons of the total amount of solid waste received during calendar year 2020. Of the total MSW received, 10,251,111.06 tons originated in the Commonwealth and 4,070,341.77 tons originated from other jurisdictions.

Of the solid waste managed in Virginia during the year, 72.38% or 13,668,094.82 tons were landfilled onsite, 11.84% or 2,236,485.71 tons were incinerated onsite, and the rest was managed by other means. Of all solid waste received at Virginia facilities during the year, 63.64% was MSW, 19.28% was Construction, Demolition, and Debris (CDD) waste, 6.03% was industrial waste and the remainder was other types of waste.

The 2021 Annual Solid Waste Report contains a wealth of information about Virginia's solid waste profile and should be reviewed in its entirety for additional information about solid waste in the Commonwealth.

Permitted facilities that treat, store, or dispose of solid waste are required to report the available capacity, expected lifespan, and current disposal rates. The 2021 Annual Solid Waste Report includes a list of MSW sanitary landfills, CDD landfills, and non-captive industrial landfills and their reported remaining capacity and lifespan. Importantly, the calculated statewide remaining years of landfill capacity does not account for regional variations, population changes, changes in waste generation, or the future closing of disposal units. Also, calculations do not include facilities that have not been built and are not accepting waste for which permits may have been issued.

- Fifty permitted MSW landfills reported 248,318,917.05 tons of available capacity and a statewide expected remaining permitted life of 21.3 years.
- Fourteen permitted CDD landfills reported 31,364,137.49 tons of available capacity and a statewide expected remaining permitted life of 17.9 years.
- Three permitted industrial landfills reported 4,091,302.03 tons of available capacity and a statewide expected remaining permitted life of 15.9 years.

Additionally, six permitted waste incinerators received 2,319,838.71 tons of waste and incinerated most of this onsite. See the 2021 Annual Solid Waste Report for more details.

Permitted solid waste management facilities reported that 8.67% (1,637,515.14 tons) of the total waste they managed was diverted from disposal by recycling or mulching. Facilities composted 1.10% (207,332.88 tons) of the total waste managed. This does not constitute all of the recycling or composting that occurs each year in Virginia as this total is inclusive only of the recyclable or compostable materials diverted from the landfill by the

[7] https://www.deq.virginia.gov/home/showpublisheddocument/9500/637593571415570000

permitted solid waste management facilities. Most recycling occurs at facilities other than permitted waste management facilities.

The Calendar Year 2020 Virginia Annual Recycling Summary Report established a calculated recycling rate for Virginia of 45.5 percent.[8] The recycling rate refers to the total tonnage of recycled materials compared to the total tonnage of MSW. The 2020 recycling rate marks a solid increase from 2019's 43.2 percent, despite recycling challenges from the COVID-19 pandemic and the lack of recycling markets in certain regions.

The recycling rate reports submitted to DEQ for the 2020 report represent 324 Virginia localities. A breakdown of the data shows that 3.9 million tons of principal recyclable materials were recycled, including paper, metal, plastic, glass, commingled materials, yard waste, waste wood, textiles, waste tires, used oil, used oil filters, used antifreeze, inoperative automobiles, batteries and electronics. More details about Virginia's recycling rate and the role that recycling plays in overall waste management can be found on DEQ's website.[9]

VIII. Role of Capacity in Landfill Permitting

Written into the directive within EO-77 is the requirement to develop "recommendations for executive and legislative actions necessary to ensure that the Commonwealth does not exceed the capacity of existing landfills and incinerators." Knowing the existing capacity of Virginia's landfills is an important part of landfill permitting because the need for additional capacity is a key determinant as to whether a new proposed landfill or landfill expansion should be permitted.

The Virginia Waste Management Act (Title 10.1, Chapter 14) specifies that sanitary landfills or other facilities for the disposal, treatment, or storage of nonhazardous solid waste shall not operate without a permit from the DEQ Director. When issuing such permits, or permit modifications that allow an expansion or increase in capacity of an existing facility, the Director must make a determination and hold a public hearing prior to issuance.

Prior to making a final decision on a permit action for a new landfill or landfill expansion or increase in capacity, the DEQ Director must make several determinations:

1. that present and future human health, safety, and the environment are protected;
2. there is a need for additional capacity;
3. there is sufficient infrastructure;
4. that the activity is consistent with local or state imposed limits;
5. that the public interest is served; and
6. consistency with regional and local solid waste management plans.

Historically, DEQ has used a planning period of twenty years to evaluate the need for a proposed facility, expansion, or increase in capacity. This is consistent with the twenty-year planning period required for solid waste planning units (9VAC20-130-120). The agency has also historically assessed landfill capacity at the solid waste planning unit (SWPU) level or a larger regional level. But not a statewide capacity assessment. The region may include the host community SWPU and neighboring SWPUs outside the host community, SWPUs within the larger Planning District Commissions/Regional Councils, or geographic region comprising a 75-mile radius of the proposed facility, expansion, or increase in capacity.

[8] https://www.deq.virginia.gov/land-waste/recycling/recycling-data
[9] https://www.deq.virginia.gov/land-waste/recycling

For the purposes of the capacity determination, the Director currently may consider whether the new facility, expansion, or increase in capacity is needed so that the host community's SWPU has at least twenty years of waste management capacity or that there exists a regional need for capacity to attain a twenty-year threshold regionally.

According to the 2021 Annual Solid Waste Report for CY2020, Virginia has 21.3 years of MSW landfill capacity remaining. This is an increase from the 20.6 years of MSW landfill capacity reported for CY2019.

IX. Additional State Activities

Over the past several years, Virginia has adopted a number of policies and approaches aimed at reducing plastic pollution and solid waste, eliminating litter, and diverting more solid waste from disposal in landfills. The lead-by-example initiatives in EO-77 complement these existing efforts. Many of these approaches are ongoing and are inclusive of similar efforts to identify recommendations for changes to solid waste management to encourage more alternatives to disposal and reduce the need for landfilling.

Expanded Polystyrene Food Container Ban

Initially passed by the General Assembly in 2020 with a reenactment clause, HB 1902 (2021) from Delegate Carr prohibits the dispensing by a food vendor of prepared food to a customer in a single-use expanded polystyrene food service container by 2023 for certain chain restaurants and 2025 for all food vendors. The bill includes a process for hardship exemptions and for penalties. The penalties collected are to be deposited in the Litter Control and Recycling Fund or to the treasury of the relevant locality, as appropriate.

A portion of the penalties deposited into the Fund are to be used for public information campaigns to discourage the sale and use of expanded polystyrene products.

This law applies to any individual, organization, group, or state or local government entity that regularly provides food as part of its services, including via a store, shop, sales outlet, restaurant, grocery store, supermarket, delicatessen, or catering truck or vehicle.

The law features delayed enactment and differentiated treatment for chain restaurants with twenty or more locations. Those restaurants must comply with the law by July 1, 2023. Beginning July 1, 2025, all food vendors must be in compliance.

Plastic Bag Tax Authorization

Legislation passed in 2020 by Delegate Carr (HB 534) and Senator Ebbin (SB 11) authorizes any locality to impose a tax of five cents per bag on disposable plastic bags provided to consumers by certain retailers, with certain bags being exempt from the tax.

The bill allows every retailer that collects the tax to retain a portion of the five-cent tax and provides that the revenue accruing to the county or city shall be used for certain purposes including environmental cleanup and the provision of reusable bags.

This legislation passed after several failed attempts in recent years to adopt similar legislation. Those various efforts included approaches such as plastic bag bans, plastic bag taxes, statewide approaches, local options, and different ways to distribute generated proceeds.

As of December 1, 2021, five localities have adopted a plastic bag tax per this legislation: Roanoke City, Fredericksburg, Fairfax County, Alexandria, and Arlington.[10]

Balloon Release Prohibition

HB 2159 from Delegate Guy in 2021 made it unlawful for anyone over 16 years old to intentionally release, discard or cause to be released or discarded outdoors any balloon made of a non-biodegradable or non-photodegradable material or any material that requires more than five minutes' contact with air or water to degrade. The penalty is $25 per balloon released or discarded. The law does not apply to any balloon that is released on behalf of the Commonwealth or the U.S. or pursuant to a contract with the Commonwealth, the U.S. or another state for scientific or meteorological purposes or hot air balloon that is recovered after launch.

Virginia Marine Debris Reduction Plan

In October 2014, Virginia because the first state on the east coast to publish a Marine Debris Reduction Plan. The plan is a roadmap for working together on sustained approaches to reduce the flow of plastic and other litter. The plan was updated in 2021. The revised plan includes updates to major goals to reduce consumer debris, derelict fishing gear, microplastics and abandoned/derelict fishing vessels. The updated plan's format aligns with the National Oceanic and Atmospheric Administration's 2021-2026 Mid-Atlantic Regional Marine Debris Action Plan, which includes Delaware, Maryland, New Jersey, New York, Virginia and the District of Columbia.

Plastic Waste Prevention Advisory Council

Established by the 2020 General Assembly (HB 1354, Delegate Plum), the Council's charge 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." The Council, which consists of ten members, including two legislative members, four nonlegislative citizen members and four ex officio members, held four meetings during 2021 and submitted its annual report to the General Assembly on November 1, 2021.[11] The Council reported working within tight deadlines to review background material and provide recommendations on specific issues requested by the legislation. Due to the limited time allowed for more in-depth deliberations, several items were pushed off for further discussion. Per the directive in EO-77 to consult with the Plastic Waste Prevention Advisory Council, many of the Council's recommendations are included in the recommendations provided in this report.

Waste Diversion and Recycling Task Force

DEQ was tasked by the 2020 General Assembly (SJ 42, Senator Hanger) to establish a Waste Diversion and Recycling Task Force to meet to discuss ways to increase waste diversion and recycling. SB 1319 (Senator Hashmi, 2021) continued the Task Force and expanded the scope.

[10] https://www.virginiamercury.com/2021/09/24/led-by-roanoke-virginia-cities-and-counties-begin-taxing-plastic-bags/
[11] https://rga.lis.virginia.gov/Published/2021/RD628

The General Assembly has directed the Task Force to discuss and consider:

- methods of improving recycling, reducing waste, and diverting waste from landfills with specific attention given to food residuals, organic waste, and baseline recyclables;
- recommendations to reduce waste at the source, such as composting and recycling or organic matter;
- whether current recycling rates required by Virginia law should be increased and whether state policy should give landfills a greater role in the management of organic material;
- potential improvements in the goals and efficiency of the grant program funded by the Litter Control and Recycling Fund;
- a systematic review of policies, legislation, practices, and programs proposed and implemented by other states and consider recommendations for waste diversion policies in Virginia based on those best practices;
- Virginia's status as a prime destination for out-of-state trash and ways in which waste from other states can be diverted from Virginia's landfills;
- considerations regarding electric vehicle and electric grid backup battery waste; and
- the role of a composting and food donation infrastructure in reducing the volume of waste that is accepted by landfills – including a robust analysis of existing and needed composting infrastructure and systems.

The Task Force held its first meeting on October 13, 2021, to begin discussing the issues and brainstorm possible steps and actions to address the overall goals of waste reduction and diversion, improving recycling and the litter grant, food donation and composting infrastructure, and management of electric vehicle batteries. The ideas were consolidated and sent to the Task Force so that members had time to provide additional steps and actions for consideration by the group. This additional feedback is currently being consolidated by DEQ staff, with the goal of sharing all ideas back with the group for prioritization and determining the agenda for the next meeting. To aid in the work of the Task Force, DEQ shared program summaries related to the annual solid waste information and assessment (SWIA) report, annual recycling rate report, litter grant, and information about composting regulation and infrastructure. The Waste Diversion and Recycling Task Force plans to hold three additional meetings during the 2022 calendar year.

Solid Waste Permitting – Director's Determination Guidance

The Department of Environmental Quality is currently considering guidance to address transparency in the Director's determination process, required any time the agency is issuing a solid waste permit for a new solid waste management facility (except Permits-by-Rule), or processing a permit modification for an expansion or increase in capacity of an existing solid waste disposal facility. DEQ is engaging stakeholders in development of the guidance. Any final draft guidance would be posted on TownHall for an official comment period. Guidance documents generally set forth standard operating procedures for the agency. However, guidance does not mandate any particular method nor does it prohibit any alternative method.

X. Future Considerations

Plastic pollution remains a challenge in Virginia and solid waste reduction and diversion will be a major environmental, economic, and public health opportunity in the next decade. Shifting markets for recycling, increased urgency to reduce emissions of greenhouse gases like methane, increased concern about persistent toxics and emerging contaminants, the vital importance of environmental justice, alarming rates of plastic

pollution in our oceans and waterways, and land development pressures all combine to raise public concerns about waste management. The traditional systems that have worked to manage waste are challenged by significant stressors.

EO-77 directed the Secretary of Natural and Historic Resources to develop recommendations to ensure that the Commonwealth does not exceed the capacity of existing landfills and incinerators. This report provides a broad overview of the leading-by-example components of EO-77 and the status of the Commonwealth's solid waste management system and the various approaches ongoing to address the stressors on the existing system. Over the next decade, Virginia has the opportunity to reshape how solid waste is managed. Policy considerations should include enhancing investment in a circular economy, promoting innovation, and taking a leadership role in shaping waste reduction and diversion strategies.

In partnership with the General Assembly, the Northam Administration has laid the groundwork for employing new approaches to solid waste management in Virginia. The following is provided for policymaker consideration as this important work moves forward.

Existing Councils, Tasks Forces, and Work Groups

Recent legislation and executive action have established several different groups charged with addressing various parts of the solid waste management ecosystem. These collaborative efforts should be continued and charged with providing as much information as possible for Virginia policymakers about best practices and new innovative approaches to waste reduction and diversion and issues related to solid waste. Additionally, these efforts should be the leading edge in the development of consensus recommendations for legislative action.

- The **Virginia Council on Environmental Justice** should continue to investigate the intersection of solid waste management and environmental justice.
- The **Plastic Waste Prevention Advisory Council** is an appropriate body to develop broad consensus recommendations to prevent plastic pollution. The Council should be continued beyond its 2023 sunset. The Council has called for support, education and outreach, and monitoring and reporting for the statewide expanded polystyrene ban and the local option plastic bag tax. The Council has recommended a statewide waste characterization study to define the volume and composition of both solid waste and recyclable material streams for the Commonwealth with specific details on the amount and types of plastic waste by resin type. This data would help to establish and understand the amount and character of plastic waste in Virginia and develop necessary baselines. To measure the performance of any interventions, comparable data will be needed on a regular basis to determine if recommended interventions are resulting in eliminating plastic waste and growing the circular economy. In addition, the Council should receive updates and provide advice to DEQ on implementation of EO 77.

- The **Waste Diversion and Recycling Task Force** should be provided significant support by the Administration and be a key convener of stakeholders. The Task Force will meet three times in 2022 and should continue to be supported by the Administration. The Task Force should assist DGS in connecting with vendors to facilitate state agencies' access to recycling and composting options. Consensus stakeholder recommendations of the Task Force should be supported.

Virginia Leading by Example to Reduce Plastic Pollution and Solid Waste

Based on state agency experience over the past year, there are several areas where the requirements of EO-77 and the implementation of those requirements would be enhanced.

- **Legislation** – Permanently codifying state government targets for plastic waste reduction would provide certainty to state agencies and to the business community and would support new and emerging businesses with plastic alternatives. Sparking innovation in plastics alternatives would lower the cost of those alternatives for other entities and help smooth the transition away from plastics.
- **Permanent Exemptions** – Currently, the order allows for a temporary exemption of items used for public health or public safety from the immediate cessation of use requirements. The exemption allows agencies to continue to use those items until December 31, 2025, when the 100% phase out of all non-medical single-use plastic and expanded polystyrene is required. The temporary public health and safety exemption should be made permanent with a requirement that agencies provide DEQ justification for the exemption. In addition, agencies should be authorized to seek from DEQ a permanent public health exemption for plastic containers/bags were determined to be appropriate. Furthermore, DEQ should continue to provide for extensions when an agency can document, do DEQ's satisfaction, that non-plastic alternatives are not available and that the agency will strive to collect and recycle items under the extension.
- **Procurement Assistance –** Given the leadership role of the Department of General Services (DGS) in the agency procurement process, DGS can assist with agency efforts to incorporate sustainability by:
    - Making alternative products available to agencies though the DGS Virginia Distribution Center and labeling products as reusable, recyclable or compostable. DEQ can assist DGS in identifying qualifying products.
    - Incorporating requirements for purchasing more sustainable products into the procurement system and guidance manual. This would make it easier to quantify the amount of reusable, recyclable or compostable products purchased.
    - Sponsoring events with vendors to showcase their sustainable products to state agencies and institutions of higher education. DEQ can assist with identifying qualifying vendors. DEQ could share vendor information on their website.
    - Working in partnership with DEQ to develop an inventory management tool to support agency management of waste streams.

Solid Waste Facility Permitting

- **Capacity Determination** – Legislative action could provide additional clarity for the Director's determination regarding the need for additional landfill capacity. Legislation could address the timing for the landfill capacity determination. Currently, the determination is made after the development of a draft permit. This creates an expectation from the applicant that a permit is inevitable, as well as an assumption from nearby communities that the issue has already been decided. Legislation could also specify how landfill capacity is determined, such as by determining whether a proposed new facility, expansion, or increase in capacity is needed so that the host community's SWPU has at least twenty years of waste management capacity to accommodate waste produced within that SWPU.

Ensuring the Commonwealth Does Not Exceed Existing Landfill Capacity – Additional Tools

- **Composting –** Supporting and growing composting infrastructure, including collection, commercial and backyard composting facilities, and compost markets, can reduce landfill needs. Tools include:

- Incentivizing composting by providing financial and regulatory support for backyard (non-commercial) composting by residents, certain businesses, and state and local government agencies.
- Requiring state universities and state agencies with major food operations to implement on-site composting solutions for food waste and provide support for utilizing the compost on-site in beds and gardens.
- Supporting local markets by requiring state agencies to procure compost or mulch from in-state suppliers before purchasing compost or mulch from out-of-state suppliers.
- Providing economic development and operating incentives for commercial composting facilities in Virginia.
- Establishing organic waste diversion mandates for SWPUs similar to the recycling mandates.

- **Recycling -** Growing and promoting a robust statewide recycling infrastructure including collection, sorting, and beneficial reuse of recycled materials to reduce landfilled waste.
- **Producer Responsibility** – Producers can take greater responsibility for end-of-life management of their products such as through:
  - stewardship programs to support voluntary producer responsibility targeting single-use food and beverage packaging.
  - assessing various potential pathways for implementing an extended producer responsibility (EPR) policy for certain recyclable items. Typically, extended producer responsibility policies require the producer or distributer of certain items be responsible for their end-of-life disposal. These policies already exist to a certain extent for some items in Virginia. Examples include: solar developers are required to have a plan for end-of-life management for solar panels; car battery retailers are required to offer used battery collection. EPR policies are being considered in states across the country.
- **Bottle Bill** – Beverage container deposit program often reduce litter and landfill needs.
- **Litter Tax** – Consider increasing the litter tax to be more in line with peer states. Proceeds generated from the tax could support litter clean ups and public outreach campaigns.