# Recommendations for Managing Plastic Packaging Waste in Washington

Prepared for the Washington State Department of Ecology

**September 14, 2020**

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# Glossary of Key Terms and Acronyms

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| **Chemical recycling** | Any process by which a polymer is chemically reduced to its original monomer form so that it can eventually be processed (re-polymerized) and remade into new plastic materials that go on to be new plastic products [1]. |
| **Commercial sector** | Waste generators that include private commercial businesses, industrial operations, and institutions. |
| **Consumer Packaged Goods (CPG) companies** | Also called brand owners or fast-moving consumer goods (FMCG) companies, these companies make consumer products that are sold quickly and at relatively low cost, including packaged foods and beverages, toiletries and personal care items, and other consumables. Some of the largest CPGs include Coca-Cola, Nestlé, Proctor & Gamble, General Mills, Unilever, PepsiCo, AB InBev, Johnson & Johnson, and L'Oréal. (For purposes of packaging regulation in programs around the world, these firms are often considered the producer or manufacturer of both the packaging and product contained in the package.) |
| **Container recycling facility (CRF)** | An establishment primarily engaged in sorting recyclable containers into distinct categories and preparing them for shipment to recycling markets. |
| **de minimis** | Legal term meaning too small to be meaningful or taken into consideration. |
| **Deposit Return System (DRS)** | Also called container deposit systems or "bottle bills," these laws place a refundable deposit on beverage containers which is returned to consumers when they return empty containers to a redemption location. Ten states and one territory (Guam) in the U.S. have a DRS, covering 28 percent of the population. DRS programs account for 47 percent of all beverage containers recycled in the U.S. [2]. |
| **Extended Producer Responsibility (EPR)** | A mandatory type of product stewardship that includes, at a minimum, the requirement that the manufacturer's responsibility for its product extends to post-consumer management of that product and its packaging. There are two related features of EPR policy: (1) shifting financial and management responsibility, with government |

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| | oversight, upstream to the manufacturer and away from the public sector; and (2) providing incentives to manufacturers to incorporate environmental considerations into the design of their products and packaging. |
| **Freeriding** | When one firm (or individual) benefits from the actions and efforts of another without paying or sharing the costs. |
| **High-density polyethylene (HDPE)** | A strong, durable, lightweight, and chemically resistant plastic material popular for a variety of applications, including rigid plastics. Coded as plastic resin #2. |
| **Low-density polyethylene (LDPE)** | A soft, flexible, lightweight plastic material. It is often used for sandwich bags and cling wrap. Coded as plastic resin #4. |
| **Materials recovery facility (MRF)** | Also sometimes called a recycling processor, an establishment primarily engaged in sorting fully or partially mixed recyclable materials into distinct categories and preparing them for shipment to recycling markets. |
| **Plastic packaging** | For the purposes of this study, "packaging" means material used for the containment, protection, handling, delivery, or presentation of goods by the producer for the user or consumer, ranging from raw materials to processed goods. Packaging includes, but is not limited to, all of the following:<br>(A) Sales packaging or primary packaging intended to constitute a sales unit to the consumer at the point of purchase and most closely contains the product, food, or beverage.<br>(B) Grouped packaging or secondary packaging intended to brand or display the product.<br>(C) Transport packaging or tertiary packaging intended to protect the product during transport. |
| **Plastics recovery facility (PRF)** | An establishment primarily engaged in sorting recyclable plastic materials into distinct categories and preparing them for shipment to recycling markets. |
| **Polyethylene (PE) film** | An inclusive term for flexible plastic material made from high-density polyethylene (HDPE), low-density polyethylene (LDPE), or linear low-density polyethylene (LLDPE). |

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| **Polyethylene terephthalate (PET)** | A clear, strong, and lightweight plastic that is widely used for packaging food and beverages, especially convenience-sized soft drinks, juices, and water. Coded as plastic resin #1. |
| **Polypropylene (PP)** | A thermoplastic used in a variety of applications to include packaging for consumer products, like yogurt pots, margarine containers and many plastic bottle caps. Coded as plastic resin #5. |
| **Polystyrene (PS)** | A transparent thermoplastic that is found as both a typical rigid plastic and in the form of a rigid foam material. Coded as plastic resin #6. |
| **Post-consumer resin (PCR)** | A type of recycled content that comes from material generated by households or commercial facilities as end users of a product or package which can no longer be used for its intended purpose. This includes returns of material from the distribution chain [3]. |
| **Producer** | An organization or company that is a resident, and a brand owner, first importer, or franchisor that supplies designated packaging to consumers in a jurisdiction where producer responsibility obligations have been regulated. |
| **Producer Responsibility Organization (PRO)** | The entity (usually a nonprofit organization) designated by a producer or producers to act on their behalf to administer an EPR or product stewardship program. |
| **RCW** | Revised Code of Washington |
| **Reprocessor** | Also called a reclaimer, these companies purchase post-consumer or post-industrial recycled commodities and process into resin feedstock to sell to manufacturers. For plastics reprocessors, end products include pellet, flake, and other resin products. Some vertically integrated reprocessors also have manufacturing operations and may use the recycled content feedstock that they reprocess in the production of their own products. |
| **Residential sector** | Waste generators that include single-family and multifamily residences or households. |
| **Secondary MRF** | An industrial facility that accepts low-volume or low-value materials from MRFs and conducts further separation, contamination removal, |

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| | and aggregation to transform these materials into marketable grades for sale to recycling markets [4]. |
| **Sent for reprocessing** | Refers to tons of baled recyclable commodities that are sold by MRFs to reprocessors to process into resin feedstock and sell to manufacturers. We have avoided using the term "sent for recycling" since some of the material sent from MRFs will be lost during reprocessing and not end up being recycled. Under Washington State law, regulations do not refer to this material as "recycling" once it is baled and leaves the MRF but rather as a "commodity." |
| **WAC** | Washington Administrative Code |

# Executive Summary

In 2019, the Washington Legislature passed the Plastic Packaging Evaluation and Assessment law (Chapter 70A.520 RCW), which directed the Washington State Department of Ecology (Ecology) to hire an independent third-party consultant team to study how plastic packaging is managed in Washington and assess various policy options to meet the goals of reducing plastic packaging waste. The law directed the assessment to include industry initiative or plastic packaging product stewardship, or both.

The consultant team has independently developed policy recommendations to propose to Ecology based on best practices and programs research, analysis of available data on current plastic packaging use and management in Washington, and stakeholder consultation. The recommendations included in this report are the result of the Study conducted by the independent third-party consultant team and not issued by Ecology. The recommendations focus on policy approaches that provide and rely upon sustainable funding sources and that respond to the Legislature's goals in ways that do not further burden State and local government agency budgets or lead to greater inequity in cost allocations for residents and businesses.

There are **three primary recommendations, which are best implemented through legislative action in combination**. Additionally, there are two recommendations for legislative consideration covering interim policy options that could potentially be implemented in advance of—or during the transition period following—legislative adoption of the three primary recommendations. Three additional recommendations cover policy actions that advance the legislative goals in ways that are complementary to the primary recommendations. Finally, there are two recommendations covering agency activities that should not require legislative action to implement.

While Chapter 70A.520 RCW focused on plastic packaging specifically, policies focused exclusively on one material type would cause market distortions and could lead to unintended consequences due to potential packaging substitutions with materials whose impacts are unknown, poorly understood, or which have higher lifecycle impacts. For this reason, the consultant team developed recommendations in accordance with the principle that regulation of plastic packaging should seek to achieve net environmental benefits and therefore should be expanded to include consideration of all packaging so as to avoid unintended consequences and higher environmental impacts as a result of regulation, and to gain economies of scale and operational efficiencies.

**Primary Recommendations**

1. **Extended Producer Responsibility Policy Framework for All Consumer Packaging and Paper**
2. **Deposit Return System for All Beverage Containers**
3. **Recycled Content Requirements for All Plastic Packaging**

These policies have demonstrated the greatest potential to advance the legislative goals of Chapter 70A.520 RCW. These policies create feedback loops between producers of plastic packaging and those involved in its collection and management after it enters the solid waste system. These policies use economic incentives and outcome-based regulatory principles to solve problems related to both the supply of and demand for plastic packaging, and they are designed to ensure that plastic packaging management systems are supported with sustainable funding sources.

Advancing the legislative goals requires addressing issues across the plastic packaging lifecycle, so these three primary policies are best implemented together. Also, as the current systems for managing plastic packaging waste in Washington State are integrated with management of all packaging material types, these primary policies are likewise recommended to cover packaging of all material types.

**Interim Recommendations**

4. **Producer Registry and Packaging Reporting**
5. **Recycled Content Requirements for Plastic Beverage Containers**

These policies represent components of the recommended primary policies that could potentially be implemented on their own, prior to the primary recommendations, as a first step toward legislative adoption of the full suite of primary recommendations.

**Complementary Recommendations**

6. **Recycled Content Requirements for Trash Bags**
7. **Ban on Problematic and Unnecessary Plastic Packaging**
8. **Standard for Customer Opt-in for Foodservice Packaging and Accessories**

These policy actions advance the legislative goals of Chapter 70A.520 RCW in ways that are complementary to the primary recommendations. The scopes and anticipated impacts of these policies are narrower than those of the primary recommendations.

**Recommendations for Agency Action**

9. **Strengthen Data Collection on Final Destinations of Materials Sent for Reprocessing**
10. **Support Development and Adoption of Reusable Packaging Systems**

These recommendations cover activities undertaken by the Department of Ecology that should not require legislative action to implement. They may, however, require reallocation or additional allocation of resources to the agency.

# Introduction

## Background

In 2019, the Washington Legislature passed the Plastic Packaging Evaluation and Assessment law (Chapter 70A.520 RCW), which states that producers of plastic packaging should consider the design and management of their packaging in a manner that ensures minimal environmental impact, and that producers should be involved from design concept to end-of-life management to incentivize innovation and research to minimize environmental impacts.

Per the law, the Washington State Department of Ecology (Ecology) hired an independent third-party consultant team to study how plastic packaging is managed in Washington and assess various policy options to meet the following goals:

- Plastic packaging sold into the state is 100 percent recyclable, reusable, or compostable by January 1, 2025.
- Plastic packaging sold into the state incorporates at least 20 percent post-consumer recycled content by January 1, 2025.
- Plastic packaging is reduced when possible and optimized to meet the need for it.

The consultant team was tasked with "**making recommendations to meet the goals of reducing plastic packaging waste, including through industry initiative or plastic packaging product stewardship, or both."** The law required the consultant team to consider the following when making recommendations:

- Implications and reality of meeting the above goals, including the alterations to the current system needed to support recycling and composting this much packaging
- Consistency with federal Food, Drug and Cosmetic Act (21 U.S.C. Sec. 301 et. seq.)
- Recommended infrastructure necessary for the complete management of plastic packaging in the state according to the waste management hierarchy
- Regulatory changes that would be required to achieve any of the recommendations, which may include regulatory changes pertaining to the following:
    - Washington Utilities and Transportation Commission-governed waste systems
    - Local recycling contract systems
    - Statute and rule updates including RCW 81.77, RCW 70A.205, WAC 480-70, WAC 173-350

The team was also tasked with identifying legislative options to meet plastic packaging goals that can be established and implemented by January 1, 2022, as well as within two to five years.

In *Moving Washington Beyond Waste and Toxics*, the State's solid and hazardous waste plan, Ecology affirmed its intention to shift from a waste diversion focus and take a **sustainable materials management approach**, considering **production and use phases of materials rather than just end-of-life**. In developing recommendations, the consultant team also considered how policy options aligned with this approach.

To inform the development of these recommendations, the consultant team conducted the following research and assessment:

- Compiled data on plastic packaging use, disposal, and management in Washington (Task 1 report: *Plastic Packaging in Washington: Assessing Use, Disposal, and Management*)
- Collected data and interviewed plastic manufacturers and recyclers about current and potential use of recycled content in Washington (Task 2 report: *Recycled Content Use in Washington: Assessing Demand, Barriers, and Opportunities*)
- Researched policy and technology options from around the world to manage plastic packaging (Task 3 report: *Successful Plastic Packaging Management Programs and Innovations*)
- Collected data and input and consulted with stakeholders on recommendations and considerations for managing plastic packaging in Washington (Task 4 report: *Plastic Packaging Management Study Stakeholder Consultation Process* - forthcoming)

The recommendations for meeting plastic packaging management goals submitted in this final report of the Plastic Packaging Management Study build on and were informed by the findings documented in these four preceding research and assessment reports. The recommendations presented here are the result of the Study conducted by the independent third-party consultant team and are not issued by the Department of Ecology.

The Plastic Packaging Management Study was undertaken during a time of unprecedented economic and social disruption due to the COVID-19 pandemic, which has altered consumption patterns, disrupted both virgin and recycled materials commodity markets, and led to a spike in demand and disposal of single-use plastic products and packaging. It is difficult to predict what long-term impact, if any, COVID-19 will have on the landscape for plastic packaging management. Where possible and applicable, the short-term impacts and potential long-term considerations were discussed in Study reports and in recommendations.

The fiscal impacts of the economic crisis created by the COVID-19 pandemic were also considered, with the recognition that the Washington State Legislature will face many competing priorities for diminished resources in the next two to five years. The recommendations presented below focus on policy approaches that include sustainable funding sources and that respond to the Legislature's goals in ways that do not further burden State and local government agency budgets or lead to greater inequity in cost allocations for residents and businesses.

**Regulating Plastic Packaging for Environmental Benefit**

The goal of sustainable materials management policies in Washington State, as described in the State's most recent solid and hazardous waste plan—*Moving Washington Beyond Waste and Toxics*—including those addressing the management of plastic packaging, is to reduce environmental and human health harms. Evaluation of environmental harms related to packaging requires review of the full lifecycle, not just its end-of-life, since most of the environmental impacts occur before a product is even used. The impacts related to sourcing of material feedstocks, presence of toxics or hazardous materials, intended use, and end-of-life management should all be considered as part of a sustainable materials management approach to regulation of plastic packaging [5].

Designing packaging to be reusable, recyclable, or compostable does not guarantee that it will have lower environmental impacts compared with a material that is not. Studies by the Oregon Department of Environmental Quality (Oregon DEQ) demonstrate that choosing materials to reduce environmental impacts by relying singularly on attributes such as recyclability and compostability can lead to unintended negative environmental impacts. And while higher recycled content generally yields lower environmental impacts when choosing packaging made of the same material (e.g., both made from PET), recycled content by itself is not a good predictor of lower environmental impacts when considering packaging made from different materials (e.g., PET and glass) [6].

While Chapter 70A.520 RCW focused on plastic packaging specifically, policies focused exclusively on one material type would cause market distortions and could lead to unintended consequences due to potential packaging substitutions with materials whose impacts are unknown, poorly understood, or which have higher lifecycle impacts. For this reason, the consultant team developed recommendations in accordance with the principle that regulation of plastic packaging should seek to achieve net environmental benefits and therefore should be **expanded to include consideration of all packaging so as to avoid unintended consequences and higher environmental impacts as a result of regulation**.

In addition, while recyclability and compostability indicate that a material has the potential to be recycled or composted, requiring that all plastic packaging achieves these attributes—on its own—does nothing to ensure that materials are effectively collected, properly sorted, or successfully reprocessed into a new product.

Recyclability, in particular, is not an end goal itself, but rather a means to achieving the larger goal of reducing the lifecycle impacts of the production and consumption cycle and delivering environmental benefits. For recycling of plastic packaging to deliver environmental benefits, collected materials must be reprocessed and used in new products and packaging in place of virgin resins to reduce resource extraction and prime plastic production overall. Moreover, plastic recycling itself must be done in a manner that protects human health and the environment. In accordance with the legislative intent stated in Chapter 70A.520 RCW, the consultant team assumed that, **to qualify as recyclable, plastic packaging must be shown to have been recycled—in practice and at scale—safely and with environmental benefit.**

# Primary Recommendations

Research on policy and technology options from around the world to manage plastic packaging (Task 3 report: *Successful Plastic Packaging Management Programs and Innovations*) found that the following three policies have demonstrated the greatest potential to advance the explicit legislative goals of Chapter 70A.520 RCW. These policies create feedback loops between producers of plastic packaging and those involved in its collection and management after it has served its useful purpose. These policies use economic incentives and outcome-based regulatory principles to solve problems related to both the supply of and demand for plastic packaging, and they are designed to ensure that plastic packaging management systems are supported with sustainable funding sources that do not further burden State and local government agency budgets.

Advancing these goals requires addressing issues across the lifecycle of plastic packaging, so these three primary policies are best implemented in combination.

Also, while Chapter 70A.520 RCW focused on plastic packaging specifically, experience from policies implemented elsewhere suggests that policies focused exclusively on one material type can cause market distortions and lead to unintended consequences due to potential packaging substitutions with materials whose impacts are unknown, poorly understood, or which have higher lifecycle impacts. For this reason, the consultant team developed these primary recommendations in accordance with the principle that regulation of plastic packaging should seek to achieve net environmental benefits and therefore should be **expanded to include consideration of all consumer packaging so as to avoid unintended consequences and higher environmental impacts as a result of regulation**.

Moreover, as the current systems for managing plastic packaging waste in Washington State are integrated with management of all packaging material types, the consultant team's assessment is that policies that address these systems are more efficient and effective when designed to cover all material types rather than applied to only a subset of materials collected through an integrated system.

# 1. Extended Producer Responsibility Policy Framework for All Consumer Packaging and Paper

## Recommendation

1. **Establish an extended producer responsibility policy for all consumer packaging and paper with a framework that makes producers responsible for achieving specific management and environmental outcomes for the consumer packaging they supply into Washington State.**

This policy should allow for the use of deposit return systems (DRS) for beverage containers or other packaging in support of reuse, recycling, and reduction of overall packaging production. (*Recommendation 2 addresses deposit return systems.*)

This policy should include or be linked to recycled content requirements. (*Recommendation 3 addresses recycled content requirements for plastic packaging.*)

## Rationale

The authorizing legislation for this Study (Chapter 70A.520 RCW) stated that producers of plastic packaging should consider the design and management of their packaging in a manner that ensures minimal environmental impact, and that producers should be involved from design concept to end-of-life management to incentivize innovation and research to minimize environmental impacts. Extended Producer Responsibility (EPR) is the policy approach designed to realize this legislative intent.

As noted above, the consultant team recommends implementing an EPR policy to cover all material types collected in an integrated manner through the existing recycling system. This policy approach is designed to avoid the potential for unintended consequences and higher environmental impacts as a result of exclusive focus on one material type that may cause market distortions and substitutions with materials whose impacts are unknown, poorly understood, or which have higher lifecycle impacts.

Moreover, the consultant team's assessment is that an EPR policy designed to cover all material types collected through the state's existing recycling system offers the potential for greater

economies of scale and operational efficiencies than could be achieved under a policy applied only to a subset of materials collected through that system.

No other policy approach has demonstrated the potential to simultaneously address the multiple challenges facing the State and local governments, residents, and businesses in the management of plastic and other consumer packaging and paper. These challenges must be addressed through a policy approach that holds producers accountable for achieving goals they have repeatedly set (and failed to achieve) voluntarily, provides sustainable funding, and stimulates the investments needed to expand and transform the recycling system. EPR policy creates needed linkages and feedback loops between the supply of recyclable packaging material collected through local government recycling programs and the demand for recycled content by packaging producers.

**EPR policy can address all levels of the waste management hierarchy.** The EPR regulatory framework can apply to performance targets set for many aspects of packaging impacts and can drive waste prevention and reuse, as well as recycling.

An **outcomes-based approach** in EPR policies provides producers with flexibility on how to design and implement the system while encouraging innovation and continuous improvement. **Producers must meet prescribed performance objectives** but have the flexibility to pursue system design changes that achieve these objectives in the most cost-effective and efficient manner possible. EPR also **allows for the use of economic incentives** in the form of eco-modulated fees **to drive environmentally preferable packaging design** and incorporation of recycled content, improve packaging recyclability, and address the challenges posed by complex or disruptive (e.g., multilayer, multimaterial) packaging.

## Policy Design Considerations

For Washington State, moving to an EPR framework for plastic packaging would most logically be achieved by including plastic packaging as part of a larger residential EPR system covering all packaging as well as paper, as these materials are already generally collected together as part of residential recycling services offered by local governments. This makes EPR for residential packaging and paper more complex than for other materials (such as solar panels, paint, mercury-containing lights, and electronics that are often collected through narrower return channels), as the policy is being imposed on a widespread existing system that handles multiple materials already. However, the presence of the existing system also enables certain economies of scale, and provides a certain level of pre-existing infrastructure.

Because EPR for packaging and paper has been implemented in other jurisdictions around the world, there is much policy and implementation experience to draw from. The approach adopted in Washington should build upon the successes of existing programs and incorporate

lessons learned to improve implementation efficiency and effectiveness. A recent review of EPR policies conducted by the Organization for Economic Co-operation and Development (OECD) concludes that outcomes-based approaches with robust performance standards and reporting requirements, clear defininitions of the materials and producers covered, and mechanisms for effective enforcement are critical to the design of well-functioning EPR systems [7].

Below are elements of EPR system design that should be incorporated into EPR regulation for plastic and other packaging and paper in Washington:

***Full producer funding and individual producer liability.*** Producer responsibility should encompass both financial and operational responsibility for managing packaging waste and its impacts, and for meeting the obligations and performance standards established under the EPR policy. Producers should be held individually responsible for meeting the requirements of the policy, although they should be granted the ability to collaborate through a producer responsibility organization (PRO) in order to meet their obligations if they choose to do so.

***Apply EPR across all packaging and paper types.*** Although Chapter 70A.520 RCW is focused on mangement of plastic packaging, applying EPR across all packaging types is essential for avoiding unfair market distortions and potentially negative unintendend consequences that may arise from treating certain materials and products differently than others. All existing EPR programs across the world address a product type (such as beverage containers, waste electronics and electrical equipment, or paint) rather than a specific material type or attribute; packaging should be treated in the same way. Also, because the current systems for collecting plastic and other packaging waste from the residential sector for recycling are largely integrated with collection of all recyclable paper, it is recommended that the EPR policy cover paper of all types.

***Clearly define the roles and responsibilities of all stakeholders.*** A clear definition of "producer" is especially important and clarification as to whether a *de minimis* exemption applies (such as for producers of less than a certain annual quantity of covered products). This will reduce confusion and freeriding. A *de minimis* provision will also ensure that small businesses within the state are not unduly burdened.

***Focus first on packaging designed for residential consumers.*** While an EPR policy approach may be beneficial to regulation of plastic packaging in the commercial sector as well as the residential sector, the current regulatory framework in Washington State establishes a clear differentiation between regulation of recyclable material generated from each. Regulations currently limit the degree to which the State and local governments may control the flow of commercially generated recyclable materials, so including commercially-generated packaging and paper in an EPR policy would require a more extensive overhaul of existing State regulations and could raise concerns related to property rights and interstate commerce protections. In

contrast, existing State law clearly places residentially generated recyclable materials within the control of the State and local governments, making implementation of an EPR policy focused on residentially generated material more easily adopted and implemented. Moreover, the precedent for EPR policy for packaging in other jurisdictions is also largely contained to the residential sector. While this may change in the future, the consultant team recommends focusing on regulation of residential sector packaging and paper in the near term.

***Create progressively increasing material-specific performance standards*.** Progressively increasing performance targets should be set at a sufficiently stringent level to stimulate system improvements and innovation from the start, and phased in to drive continuous improvement toward achieving overarching environmental objectives. In addition to recycling targets, standards could include other lifecycle assessment metrics to reduce overall environmental and human health impacts, including carbon emissions/intensity, production and lifecycle toxicity, and product/package toxicity that can impact recyclability and recycling markets. The recently suggested CleanScore from the Center for Sustainable Infrastructure—which incorporates multiple lifecycle attributes into an index score to demonstrate overall relative environmental impact—offers one example of the basis on which performance standards for plastic and other packaging could be set in the future [8]. Guidance can also be drawn from the national Toxics in Packaging Clearinghouse, Maine's new Toxic Chemicals in Food Packaging law, or from existing Washington State law such as Washington's Children's Safe Products policy, or the initial list of chemical classes identified in the Safer Products for Washington law. Stringency in mandatory standards reduces the need to regulate other more prescriptive measures.

Performance standards for recycling must be material-specific—instead of or in addition to overall targets for all packaging and paper—to avoid creating perverse incentives that preference collection and recycling of heavier materials over lighter ones. These material-specific targets should be granular enough to help ensure that recycling rates for all materials can be increased above status-quo levels and that rates of easy-to-recycle materials do not obscure the recycling rates of hard-to-recycle materials. However, they should not be too granular that measurement and reporting become impractical and/or excessively cost-prohibitive. At a minimum, plastic packaging recycling targets should be split into rigid and flexible plastics, with the potential for separate targets for beverage containers as is the case for polyethylene terephthalate (PET) bottles in the European Union under the Single-Use Plastics Directive and is being considered in Ontario.

Targets set in enabling legislation should include a mechanism for increasing the targets over time, and there should be penalties for producers that do not demonstrate compliance for their covered products, individually or collectively.

Material-specific performance targets have been adopted for the Recycle BC EPR program in British Columbia. Note that the targets for British Columbia do not include beverage containers because those are regulated and managed separately under a deposit return system.

**British Columbia: Non-Beverage Residential Packaging and Paper EPR Recovery Rate* Targets (Recycle BC 2019 Plan)**

| Target Category | Base Recovery Rates (2017) | Target Recovery Rate | Year to Achieve Target |
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| **Paper** | 87% | 90% | 2020 |
| **Plastic** | 41% | 50% | 2025 |
| **Rigid Plastic** | 50% | 55%/60% | 2022/2025 |
| **Flexible Plastic** | 20% | 22%/25% | 2022/2025 |
| **Glass** | 72% | 75% | 2020 |
| **Metal** | 66% | 67% | 2020 |

** Recovery rate is defined in Section 1 of the Recycling Regulation of British Columbia as "the amount of product collected divided by the amount of product produced, expressed as a percentage."*

Material-specific recycling targets have also been adopted by the European Commission as part of the Waste Framework Directive and will be applicable to all EPR programs for packaging in Member States, which will be mandatory across all E.U. Member States by 2023. Material-specific recycling targets are being developed as part of the regulatory overhaul of the EPR program for packaging and paper in Ontario, which is transitioning to full producer responsibility by 2026.

Along with material-specific recycling targets, the policy must include a clear definition of what is considered "recycled" and how it is to be measured, and how the calculation is to be done. Recycling activities should be defined based on what is reprocessed back into new products (i.e., discounting process losses and contamination), in alignment with the definitions and rules for recycling rate calculations recently developed by the European Commission [9].

***Require registration and reporting by producers.*** In order to ensure transparency of materials placed on the market and accurate accounting of recycling rates and other performance standards, the policy must set the methodology and define the materials reporting categories for which producers must report their supply. Although producers should be allowed to use a PRO to compile and submit reports on their behalf, the State regulatory agency should have direct line of sight and ability to audit data provided by all individual producers. This is the model under development in Ontario for producer reporting requirements as part of the province's transition to full producer responsibility for residential packaging and paper. Reporting at this level will allow for a better understanding of what changes may be necessary

to material categories over time, and to track the effectiveness and efficiencies of collection and management systems.

***Create collection/accessibility standards to ensure convenient, equitable access to opportunities to participate in recycling***. At a minimum, an EPR policy should ensure that the producer-funded system provides convenient, consistent, and equitable opportunities for recycling for all residents throughout the state, including residents in both single-family and multifamily dwellings. This could be provided through a mix of curbside residential recycling service in areas that already have curbside garbage collection and a network of recycling drop-off locations for residents in rural areas that do not have curbside garbage service, and for all residents for recyclable materials determined to be problematic for collection through curbside service. In addition to residential service, the policy could require collection services to be provided in publicly owned places, such as sidewalks, plazas, and parks and, eventually, to non-residential generators of consumer packaging and paper. These accessibility standards should be established in the regulation as one of the outcome-based performance metrics that producers are obligated to achieve.

***Allow local governments to retain their existing authority over collection of recyclable materials from residents.*** Existing EPR policies grant producers differing degrees of control and flexibility with respect to how services are provided and what materials are collected and processed, depending on the service context in place prior to EPR implementation, the specific considerations related to the materials covered by the policy, and the goals and values of the implementing government. Based on these factors, the consultant team believes that an EPR system for packaging and paper in Washington should allow local governments to retain their existing authority over collection of residential recyclables and provide them with the option to be involved in the collection under the EPR system or, alternatively, to transfer their collection authority to producers if they so choose. This is similar to the hybrid model used in British Columbia, in which municipalities can provide the services themselves or through their contracted service providers in accordance with consistent service standards. This allows municipalities to realize the economic efficiencies and cost savings of operating or contracting for recycling, trash, and organics collections alongside each other, while providing producers some involvement in collection system designs and enabling greater standardization of collection services. EPR policy in Washington will also need to address how service is to be provided to residents in areas where solid waste service is delivered by private haulers regulated by the Washington Utilities and Transportation Commission (WUTC) to ensure that service is equitable and convenient compared to areas where service is provided by local governments and contracted haulers.

Payment mechanisms between producers and local governments, and between producers and service providers in WUTC-regulated areas, need to be carefully considered as part of discussions on operational responsibility for collection. The policy needs to be clear on system

boundaries, i.e., the types of costs that producers will be expected to cover. The rights, roles, and responsibilities of private haulers, recyclers, and MRF operators must also be carefully considered and incorporated in the policy.

***Transfer responsibility for post-collection and processing to producers.*** Beyond providing collection services, local governments should not have any operational responsibility for sorting and marketing collected materials, which should become the responsbility of producers (or a PRO). Materials collected from residents in WUTC-regulated areas with producer funding should also become the responsibility of producers, and collection service providers should be required to deliver these materials to facilities operating under agreements with producers. Centralizing post-collection sorting and marketing activities allows for greater investments in technology due to the economies of scale that result from handling larger volumes of material. Additionally, transferring this responsibility protects local governments from market risk on sales of materials. Producers should be required to conduct fair, competitive procurement processes and should be expected to utilize existing infrastructure where it is reasonable to do so, and to invest in additional infrastructure where it is needed to achieve the accessibility standards and performance targets.

***Empower and sufficiently fund a regulatory agency to carry out rigorous oversight and enforcement.*** An outcome-based EPR policy requires strong oversight to ensure compliance. The agency charged with oversight must have the dedicated resources to conduct compliance monitoring, and must have real enforcement powers to bring producers into compliance as needed. Given the resource constraints facing the State, dedicating funding for this may be a challenge. In a growing number of EPR systems, including in Washington's own E-Cycle program, producers are being called upon to provide funding for these activities through registration or reporting fees. This approach can be an effective way to finance oversight and enforcement but funding must be protected for the sole use of policy enforcement and the State regulatory agency's oversight activities must be sufficiently insulated from influence or pressure from those producers being regulated.

## Necessary Infrastructure

Producers will be responsible for financing and/or directly developing additional infrastructure determined necessary for achieving legislated service requirements and performance standards.

In order to meet collection/accessibility standards, producers will need to pay for and/or provide **expansion of residential collection service infrastructure** (assuming future statewide standards are higher than current standards in some parts of the state). It is assumed that service expansions will be required in numerous areas throughout the state related to curbside, multifamily, and drop-off recycling collection services. Producers will also need to fund consistent, robust, and effective education designed to reach all state residents.

In order to meet collection/accessibility standards and material-specific performance standards, producers may also need to develop **additional collection infrastructure/programs for certain packaging materials**. It is assumed that additional collection infrastructure/programs may be needed for polystyrene foam packaging, plastic film and flexible packaging, glass packaging, and potentially for beverage containers or other packaging covered under a DRS if included as part of the EPR system. All collection system activities will need to be developed in consultation with local governments, who will retain authority to act as service providers directly or through contracted haulers in their jurisdictions.

In order to meet progressively increasing material-specific performance standards phased to drive continuous improvement, producers will need to fund and/or develop **additional sorting infrastructure for plastic packaging**. This will be determined by producers in consultation with existing sorting system stakeholders, and may include one or more of the following:

- Additional positive sorting of rigid plastic packaging types at primary MRFs
- Development of secondary MRFs to sort residuals for additional capture of recyclable packaging not separated during primary MRF sortation
- Development of additional specialized sorting facilities, such as a PRF or a CRF, focused on additional sortation of plastic packaging not separated during primary MRF sortation

To meet material-specific performance standards, as well as to reprocess collected materials into feedstock needed to meet recycled content requirements (if included in EPR policy or adopted separately), producers may need to fund and/or develop **additional reprocessing/reclaiming infrastructure for plastic packaging**. This will be determined by producers in consultation with service providers and may include one or more of the following:

- Development or expansion of mechanical recycling operations that provide new/additional regional reprocessing capacity and/or that reprocess additional types of plastic packaging
- Development or expansion of chemical recycling operations that support polymer-to-polymer reprocessing

## Associated Changes to Existing Regulations

In addition to development of new statutes and rules following legislative policy action, changes may be needed to RCW 70A.205.005, including listing producers separately as responsible for plastic and other packaging and paper. Changes may also be needed to Chapter 70A.205 RCW related to requirements for what local governments must include in their solid waste management plans (.015, .040, .045, .050, .070) in terms of collection service standards and designated materials and related to what information must be reported by collectors and

recycling facilities to Ecology (.240, .245, .330) so that they are in alignment with EPR policy requirements.

Changes may be needed to Chapter 81.77 RCW and WAC 480.70 to address how packaging and paper may be collected for recycling from residents in WUTC-regulated areas to ensure that all residents receive service in accordance with the accessibility standards established. Specifically, the collection or transportation of covered materials collected in the form of source separated recyclable materials from residences could be exempted from the provisions of the chapter (similar to the exemptions already granted for cities and counties that provide these services under sections .020 and .130). Alternatively, additional regulations could be developed that stipulate that producers must fulfill their obligations through use of the certificated hauler, in accordance with the provisions of Chapter 81.77 RCW and WAC 480.70. Changes would also likely be needed to clarify that residential recycling collection service provided by certificated haulers must be provided in accordance with the accessibility standards required under the EPR policy and that materials collected must be delivered to designated facilities operating under the EPR system.

In order to be eligible to receive funding for recycling collection through the EPR system, local governments with contracted collection service will need to adjust their contracts to align with collection service standards and establish requirements related to delivery and ownership of collected recyclables. These changes can be made to new or existing contracts during the transition phase, or the implementation timeline can be set to allow for phasing in of local jurisdiction participation based on contract expiration timelines.

## Costs of Administration and Enforcement

Implementation of an EPR policy will require the ongoing involvement of a State regulatory agency. Associated costs for adminstration and enforcement will primarily involve staff resources, including for rulemaking and program initiation activities such as initial outreach to notify producers of covered products of their obligations, involvement in the consultation process, and initial plan review. Additional program initiation costs are anticipated related to development of the producer registry and data tracking system and potentially purchases of industry data to facilitate producer outreach. Once producers are operating under an approved plan, there will be ongoing staffing costs for compliance monitoring and enforcement activities as needed.

The costs to the State for administration and oversight would depend on the specific details of the statute adopted. For reference, in British Columbia, the Ministry of Environment and Climate Change (MOECC) has five full time employees (FTE) devoted to program administration and oversight of packaging-related EPR programs (including both EPR and DRS programs) plus partial involvement from one FTE dedicated to enforcement across all of the province's EPR

programs. In its fiscal note on the original version of the plastic packaging stewardship policy (SB 5397) introduced in 2019, Ecology estimated such a policy for plastic packaging only would require 4.3 FTE in the initial biennium following legislative passage, and 1.2 FTE in the subsequent biennium [10]. With expansion of the policy to cover all consumer packaging, it is anticipated that the level of State agency involvement would be somewhat higher.

Both initial and ongoing costs incurred by the State should be covered through producer registration fees. However, initial State expenditure would be required in advance of fee collection for rulemaking and to set up the producer registry database and fee collection mechanism if not implemented in advance under a separate policy (see Recommendation 4).

## Other Costs and Benefits

As with costs for administration and enforcement, the costs and benefits to Washington State residents and businesses from an EPR policy will depend on the specific details of the statute adopted. An assessment of the anticipated costs and benefits of a specific EPR policy proposal for packaging and paper is currently being conducted by the King County Responsible Recycling Task Force (RRTF). That report, which will provide quantitative findings on costs and benefits of the specific policy framework developed for the RRTF, is expected to be published by the end of 2020.

In general terms, experience from other jurisdictions that have implemented EPR for packaging and paper indicates that system costs for recycling services under an EPR system are expected to be similar to existing system costs in areas that already have robust collection programs, and where consolidation and sorting systems are already in place and operating efficiently. In areas where collection programs and/or sorting infrastructure are not yet in place or are outdated and inadequate to meet the policy requirements, additional funding and investments by producers will be needed. And, importantly, who pays these costs will change, as discussed below.

As a result, total costs of an EPR system for managing plastic and other packaging are expected to be higher compared to the existing system because the EPR system will provide collection services to residents who currently lack access and will support collection infrastructure for materials not currently collected consistently or equitably throughout the state. However, EPR system costs on a per-ton-recycled basis or per-household-served basis may be lower because more tons of material will be collected and recycled, more households will receive service, and operational efficiencies may be achieved through delivery of services in a harmonized, statewide manner.

Whether total system costs are higher or lower on a per-ton or per-household basis, they are expected to be more stable over the long term and would be better insulated from the cost increases and market volatility experienced in Washington in recent years. This is due to the

economies of scale achieved in post-collection activities, reliability of supply produced, and cultivation of domestic end markets expected to result from EPR system implementation.

Under an EPR policy, **producers** will be responsible for paying these costs to provide recycling system services for packaging and paper at the levels required to meet legislated performance standards and collection service access requirements. Producers will also need to cover the costs of State oversight to ensure a level playing field and for fair and effective enforcement.

Under the recommended policy approach, producers responsible for small quantities of covered products would be exempt from producer responsibility requirements to minimize the regulatory burden on small businesses. In Ontario, where the EPR system includes a similar list of covered products as recommended here, there are approximately 1,830 registered producers. These producers share the costs of the residential recycling system through fees paid based on the type and quantity of packaging they supply into the market. Fees are based on a fee schedule established by the PRO that takes into account the relative costs of managing different types and formats of packaging materials. Fees charged to producers can also be modulated to reward the use of packaging designs that use recycled content or have other beneficial attributes, or to penalize packaging designs that disrupt recycling systems or have other negative attributes or impacts.

**Residents** would no longer be charged for curbside recycling service as part of solid waste collection service. If residential recycling system costs under EPR in Washington are similar on a per household basis to B.C., Washington residents would see a net savings in annual service costs along with recycling system improvements and greater environmental benefits.

As described in *Plastic Packaging in Washington: Assessing Use, Disposal, and Management* (Task 1 report), under current recycling service arrangements, Washington residents receiving curbside recycling service under municipal or contracted service are likely paying between $60 to $120 per year through costs embedded in residential garbage rates. Washington residents receiving curbside service in WUTC-regulated areas pay through separate rates for recycling service that equal $121 per household annually on average. Costs to residents for recycling service have been increasing substantially in recent years and are heavily influenced by factors beyond the control of residents and recycling service providers, including the packaging designs and materials used by producers and the strength of demand for recycled content. Producers have much greater control over these factors. Once they are made responsible for bearing the costs of these factors, producers may be motivated to make changes to their packaging to reduce overall recycling system costs.

Under the EPR system in British Columbia, system costs in 2019 were equivalent to $55 per household [11]. For this, B.C. residents receive a system that has increased residential recycling rates for packaging and paper products from somewhere between 50-57% in 2013 before the

EPR system was established (when B.C. faced similar challenges as Washington's current system in transparency and reliability of data reported around recycling) to 78.2% in 2019. Under EPR, B.C. residents have also benefited from increased service access and equity, and improved transparency and reliability in recycling data reported.

As **consumers**, residents might pay higher prices for consumer products purchased with packaging to cover the EPR system costs paid for by producers. However, a recent analysis conducted for Oregon DEQ found no consistent pattern of higher consumer prices for a standard market basket of goods in jurisdictions with EPR policies, as compared to those without such a policy [12]. Fee rates for packaging under existing EPR systems in Canada and Europe typically equate to less than 1 percent of the price of the associated product.

As an industry, **recycling service providers**, both those involved in collection and in operations of sorting facilities, will serve more customers and handle more material for recycling under an EPR system with performance standards and service access requirements that exceed current system outcomes. New businesses involved in sorting or reprocessing recyclable materials into feedstocks for new production may also be established in Washington as a result of the policy requirements. Although the allocation of customers served and tons handled by individual companies may change, the recycling industry overall is expected to grow in Washington State under EPR. A recently published report by the Ontario Waste Management Association, which represents the waste management and recycling sector in that province, noted that the planned transition to a full EPR system for packaging and paper there will create net economic opportunities, including creating domestic jobs with higher than average incomes; boosting public revenues; and adding value to the overall economy [13].

In order to participate in the EPR system and receive reimbursement from producers, **local governments** that contract for recycling collection services may need to renegotiate contracts with their existing service providers, depending on the timing of EPR implementation and the terms of existing contracts, which will require staff time and associated costs. Local governments that provide recycling collection directly may incur some costs associated with planning and coordination with producers in order to receive reimbursement. Overall, however, local governments are expected to experience net cost savings under an EPR system due to reduced burden related to planning and implementing recycling services, and will experience additional benefits such as greater stability in their recycling program, more convenient and comprehensive service for residents, reduced exposure to market risk associated with recyclable commodity values, greater system transparency, and assurance that materials collected from residents are responsibly recycled.

By placing legal responsibility for meeting stringent, enforceable recycling rate targets and other performance standards on producers, implementation of EPR for packaging and paper will result in significant **environmental and social benefits**, including reducing the costs of climate

pollution and other environmental damage associated with packaging and paper products that are borne by all current and future Washington State residents.

Requirements around verification of end markets to meet recycling rate targets are also expected to reduce the export of plastic packaging waste and address the environmental harms and social injustices exposed in many plastics recycling operations in countries without adequate protections for human and environmental health.

# 2. Deposit Return System for All Beverage Containers

## Recommendation

2. **Either as part of an extended producer responsibility system or as a separate program, establish a deposit return system (DRS) for beverage containers.**

This policy could be included as an explicit, mandatory component of an EPR policy for packaging; it could be included as an optional or conditional component of an EPR system; or it could be established through a separate policy.

Regardless of how the policy is structured, it should establish that beverage producers are responsible for implementation and accountable for achieving newly adopted performance standards.

## Rationale

**Beverage containers make up a substantial proportion of plastic packaging waste in Washington and are significantly under-recovered.** Polyethylene terephthalate (PET) bottles, which are predominantly beverage containers, represent one-quarter of all rigid plastic packaging waste generated in Washington. Currently, only approximately one-third of PET bottles are effectively collected and sent for reprocessing [14]. Washington is not alone in under-recovery of PET bottles. Nationally, the recycling rate for PET sits at just 28.9 percent [15], despite strong markets and demand for this material.

**DRS policies for beverage containers are proven to be effective in achieving high rates of return and recycling in other jurisdictions.** PET container recovery rates in the ten U.S. states with DRS programs for beverage containers averaged 63.1 percent in 2017 [2]. Under the well-designed deposit return system in Alberta, 80 percent of PET and HDPE beverage containers were recycled in 2018 [16]. In Norway, 88.6 percent of PET beverage containers were returned for recycling through the deposit return system in 2018 [17], and under Oregon's DRS, consumers returned 87 percent of plastic beverage containers in 2019 [18].

**DRS policies also have the potential to facilitate increased use of refill/reuse models.** In Oregon, the producer-run DRS reintroduced a refillable bottle program (once a common model for beverage containers) in 2018 and has stated its intention to recruit more brands and beverage types to participate [19]. Although Oregon's refillable program currently covers only glass bottles, DRS systems in other countries, such as Germany, have piloted the inclusion of

select plastic bottles, and a German-based plastic bottle and equipment manufacturing joint venture recently announced the introduction of a refillable PET bottle containing up to 35 percent recycled PET available for use in deposit return systems [20].

**Plastic beverage containers represent the most readily recyclable resin type with a clear, unmet demand for use as recycled content.** According to a recent report from the National Association for PET Container Resources (NAPCOR), the trade association for the PET packaging industry in North America, there is not enough recycled PET supply or processing capacity in the U.S. to meet brand owners' stated commitments. The report states that current collection volumes could only support a ten percent recycled content commitment by consumer packaged goods companies (CPGs) [21], though many companies have pledged to meet much higher targets in the next few years. One plastics recycling expert estimates that the U.S. would need a PET recycling rate of at least 70 percent to meet future demand [22].

**DRS programs are proven to provide quality feedstock to support recycled content use in new beverage containers which leads to overall reduction in use of new raw materials.** Recyclers prefer PET sourced from DRS programs rather than curbside programs due to material quality and volume, and according to NAPCOR Executive Director Darrel Collier, "beverage container deposit programs are essential to preserve the supply of post-consumer recycled PET" [23].

**Plastic beverage containers are commonly consumed outside the home and represent a substantial portion of litter and marine/beach debris.** An assessment of the presence of plastic packaging in litter cleared from roadways in Washington, conducted as part of *Plastic Packaging in Washington: Assessing Use, Disposal, and Management* (Task 1 report), suggests that plastic beverage containers are the second most prevalent plastic packaging type in roadway litter by weight, representing approximately one-third of all plastic packaging cleared as part of State-funded litter clean-up activities [14]. No other system globally has proven more effective at capturing this ubiquitous container stream.

**DRS policies are proven to reduce litter through economic incentives for collection/return**. A meta-analysis of government-funded studies conducted before and after implementation of DRS policies in seven states showed consistent reductions in beverage container litter and in total litter [24]. Despite the adoption of a litter tax in 1970 with the stated goal of addressing litter from beverage containers among other commonly littered items, litter from beverage containers continues to plague Washington State. However, it is important to note that while DRS policies typically have a positive effect on litter reduction, reducing litter from beverage containers is not the primary purpose of this recommendation. Rather, the irrefutable and significant improvement in the quantity and quality of plastic beverage containers recovered for recycling under DRS policies—and the resulting increase in high-quality recycled content

feedstock—is the justification for this recommendation. For this reason, the litter tax will continue to serve an important and complementary function alongside a DRS.

## Policy Design Considerations

Under deposit return systems, a deposit is paid by the retailers to the producers and by the consumers to the retailers when purchasing beverages. After consumption, the consumer returns the empty beverage container under a defined redemption route and is refunded the deposit. The producers (typically operating collectively through a PRO) refund the entities that operate redemption points, such as retailers and standalone redemption centers, for the deposit and pay a handling fee to compensate for their costs.

A DRS policy for beverage containers can be designed to operate alongside a curbside recycling collection system, either operated as a government-managed service (such as is currently in place in Washington) or under an EPR policy. Central to this is ensuring that recycling service providers can continue to be involved in collecting and sorting beverage containers and/or benefit from a DRS. Recycling sorting facilities could be required to be compensated for involvement through handling fees for sortation and could be paid for containers handled based on per-unit redemption value rather than scrap value or weight basis. This approach could potentially offset costs and result in net benefits for recycling service providers following implementation of a DRS. Revenue from unredeemed deposits during the initial years of implementation could also potentially be allocated to assist recycling service providers in making the transition to a DRS-compatible business model.

A well-designed DRS should emulate high performing, low cost systems from across the world to achieve return rates in excess of 90 percent, reduce waste to landfill and litter, guarantee quality feedstock for recycling, and deliver broad benefits across stakeholders participating in the system.

Characteristics of DRS policies that consistently achieve high redemption rates (in excess of 80 percent) include the following elements:

- **Targeted**: Establish a 90 percent return rate requirement—in line with the current performance of best-in-class DRS systems for used beverage containers; other performance standards can be set as well, such as minimum requirements for use of refillable containers.
- **Engaging incentive**: Set the deposit at a level that will incentivize consumers to return their containers, $0.10 or higher, with mechanisms to increase the deposit level if recycling targets are not met, as in Oregon, which increased its deposit from $0.05 to $0.10 after two years of lower recycling rates.

- **Convenient**: Establish convenience standards to ensure that the return network is sufficient in number and location to enable consumers to return empty containers as part of their everyday activities.
- **Comprehensive**: Include all beverage types (including soda, water, juice, dairy, and alcohol), preventing freeriders and making the program simple for consumers to understand.
- **Accountable**: Require that the latest information technology is deployed to ensure the accurate tracking of return rates, to allow correct payments, and to mitigate fraud.
- **Transparent:** Require that producers report on total supply, return and recycling rates, return system infrastructure and convenience, and system operating costs and revenues, including the value of unredeemed deposits and how they were used to improve the return and recycling system.
- **Flexible**: Provide producers sufficient control to put in place the most cost efficient system to meet the 90 percent target.

As with the outcomes-based approach to EPR policy for packaging and paper described in Recommendation 1, an outcome-based DRS policy requires **strong oversight by a regulatory agency** to ensure compliance. The agency charged with oversight must have the dedicated resources to conduct compliance monitoring, and must have real enforcement powers to bring producers into compliance as needed.

## Necessary Infrastructure

For DRS implementation, new infrastructure will be needed for consumers to redeem beverage containers for their deposits. The specific needs would depend on the convenience requirements established in the policy and would be the responsibility of beverage container producers to develop. Examples of possible new collection infrastructure include dedicated redemption centers, reverse vending machines or other collection mechanisms at existing retailers, and mobile dropsites and kiosks for collecting bagged materials such as those used in Oregon, New York, and Maine.

Sorting and reprocessing facilities associated with the DRS would likely also be needed and would be developed through producer initiative and funding.

## Associated Changes to Existing Regulations

In addition to development of new statutes and rules following legislative policy action, changes may be needed to Chapter 70A.205 RCW, including listing producers separately as responsible for beverage containers (.005).

Changes may also be needed related to requirements for what local jurisdictions must put in their solid waste management plans (.015, .040, .045, .050, .070) in terms of collection service

standards and designated materials and related to what information must be reported by collectors and recycling facilities to Ecology (.240, .245, .330) so that they are in alignment with DRS policy requirements.

## Costs of Administration and Enforcement

If a DRS were implemented by producers as part of a larger EPR system for consumer packaging, the costs to the State for adminstration and enforcement would be covered under the EPR system. If implemented under a separate policy, a DRS would require initial and ongoing involvement of a State regulatory agency similar to those described for an EPR policy described under Recommendation 1. As with EPR, anticipated costs to the State for administration and enforcement would be higher during an initial period to cover staffing for rulemaking and program initiation, with lower ongoing costs for staffing related to compliance monitoring and oversight.

The costs to the State for administration and oversight would depend on the specific details of the statute adopted. For reference, in Oregon, the Liquor Control Commission, which oversees the producer-run DRS there, has two FTE dedicated to ongoing program administration and enforcement.

Both initial and ongoing costs incurred by the State should be covered through producer registration fees. However, initial State expenditure would be required in advance of fee collection for rulemaking and to set up the producer registry database and fee collection mechanism if not implemented in advance under a separate policy (see Recommendation 4).

## Other Costs and Benefits

As with EPR policy, the specific costs and benefits to Washington State residents and businesses from implementation of a DRS for beverage containers will depend on the specific details of the policy adopted, and whether it was implemented as part of a larger EPR system or as a standalone policy. The King County Responsible Recycling Task Force (RRTF) is currently conducting an assessment of the anticipated costs and benefits of a DRS under both scenarios (as a standalone policy and as part of a larger EPR system) as well as of an EPR system without a DRS component. That report, which will provide specific findings on how a DRS would impact total recycling system costs with or without complementary adoption of EPR policy for all packaging, is expected to be published by the end of 2020.

In general terms, the costs of a DRS for beverage containers that is operated by producers would be paid for by beverage **producers** and by unredeemed deposits paid by **consumers**. According to its 2019 Annual Report, the producer-managed DRS for beverage containers in Oregon had a $44 million gross operating budget in 2019 and collected $18.2 million in unredeemed deposits (9.2 percent of total beverage container deposits) [25].

**Residents and businesses** would pay deposits on beverage containers as consumers but could redeem those by returning covered containers through one of the redemption pathways established under the DRS. If they chose not to return covered containers for redemption, whether by disposing of those containers or by utilizing curbside/onsite recycling collection services, they would forfeit their deposits. In the absence of a complementary EPR policy, as ratepayers, residents and businesses might face higher rates for recycling collection services due to lost revenue from beverage containers to cover the costs of recycling collection and sorting services. However, policy design considerations that ensure recycling service providers can continue to be involved in collecting and sorting beverage containers and are fairly compensated for their involvement can offset these potential costs.

**Recycling service providers** in Washington State currently rely in large part on revenue from commodities made up primarily of beverage containers, so changes in how costs and revenues from beverage containers in the recycling stream are allocated under a DRS would have a substantial impact on recycling service providers. The net impacts of a DRS on recycling service providers will be highly influenced by whether it is implemented as part of an EPR system or as a standalone policy, and how the financial arrangements of each policy are structured. If DRS were adopted as a standalone policy, it could be designed to ensure that recycling service providers can continue to be involved in collecting and sorting beverage containers. Recycling sorting facilities could be compensated for involvement through handling fees for sortation and could be paid for containers handled based on per-unit redemption value rather than scrap value or weight basis. This approach could potentially offset costs and result in net benefits for recycling service providers following implementation of a DRS. Revenue from unredeemed deposits during the initial years of implementation could also potentially be allocated to assist recycling service providers in making the transition.

Whether as a standalone policy or part of a larger EPR system, **local governments** may incur some costs associated with the staff time required to renegotiate contracts with existing service providers, if needed, as a result of DRS implementation. Local governments may also incur costs associated with communication and outreach efforts to build community awareness of DRS implementation details. However, local governments may also experience cost savings due to reductions in litter from beverage containers.

The anticipated return rates of beverage containers under a DRS are expected to significantly increase the recycling rates for PET bottles as well as aluminum cans, and also improve the quality of these materials for use as recycled feedstocks in manufacturing of new beverage containers, which in turn will deliver substantial **environmental and social benefits**. In addition to reducing the climate pollution associated with the production of beverage containers and creating more jobs through increased recycling activity, a DRS is also expected to reduce litter and marine debris from beverage containers.

# 3. Recycled Content Requirements for All Plastic Packaging

## Recommendation

**3. Establish and implement requirements related to recycled content for all plastic packaging supplied into the state that producers must meet.**

This policy could be included as an explicit, mandatory component of an EPR policy for packaging or it could be established through a separate policy.
(*Recommendation 1 addresses EPR policy.*)

Regardless of how the policy is structured, it must provide clear definitions of plastic packaging and recycled content, establish the methodology for calculations, define what and how producers must report and demonstrate compliance, and require third-party verification of claims.

## Rationale

Chapter 70A.520 RCW authorizing this Study included increasing recycled content in plastic packaging as a primary policy goal. The displacement of virgin resources through use of recycled content is where most of the environmental benefits of recycling occur, so driving greater use of recycled content is a primary motivation for collecting materials for recycling.

Increasing recycled content in plastic packaging results in reduced negative environmental impacts when compared against the same material with lower or no recycled content. However, when comparing different packaging materials against each other, plastic packaging results in lower lifecycle environmental impacts compared to other packaging materials in many applications, regardless of recycled content [26]. Therefore, requiring higher recycled content in plastic packaging is likely to lead to greater environmental benefits compared to prohibiting the use of plastic packaging entirely.

In absence of requirements, market demand for recycled content from a variety of plastic packaging types is very low; post-consumer resin (PCR) is uncompetitive because virgin plastic material is often cheaper due to structural issues and market failures that subsidize the extraction of natural resources and externalize the costs of virgin plastic production.

## Policy Design Considerations

While EPR has been adopted and implemented in several other jurisdictions around the world, these systems so far have only dealt with the supply side of the recycling system. EPR, without associated requirements to use recycled content obtained from that system, may result in a very efficient and optimized collection system without realizing the full benefits of a circular economy. Conversely, a recycled content policy covering all plastic packaging would be best served by working in tandem with a supply-side policy framework such as that described in Recommendation 1. Recycled content requirements for plastic packaging may also be more efficiently administered as part of an overall EPR policy framework, though they could be established through a separate policy.

As with the other outcomes-based policy approaches included as primary recommendations, effective policy design related to recycled content requirements should build on best practices and lessons learned from similar policies adopted in other jursidictions and should adhere to outcome-based governance principles. Key elements of the recommended policy approach include:

***Set recycled content requirements for plastic packaging that producers must meet in order to sell products into the state.*** Requirements should increase over time and/or establish a method for increasing targets in the future that does not require a change to State statute. Requirements should not allow exemptions linked to achieving a specific recycling rate. Requirements must be consistent with the Federal Food, Drug and Cosmetic Act (21 U.S.C. Sec. 301 et. seq.), which prohibits distribution of covered products in interstate commerce that are adulterated or misbranded and would be pertinent to recycled content requirements.

***At a minimum, consider separate targets for rigid and flexible plastic packaging*** to drive markets and technology investments for recycled content for both formats.

***Clearly define who is responsible for meeting the requirements.*** As with EPR policy, it is important to provide a clear definition of "producer" and to clarify whether and at what level a *de minimis* exemption applies to reduce issues with freeriding and reduce the regulatory burden on small producers.

***Clearly define what counts toward requirements and describe how the calculation will be conducted***. To stimulate market demand for recycled content produced from residential and commercial recycling programs, only post-consumer resin (PCR) should be counted toward requirements. Chemical recycling processes that take plastics back to base monomers should be counted only when used as feedstock for new plastic packaging. The definition of recycled content can also be constructed so as to exclude recycled content from feedstock materials that

have a toxic profile. For example, recycled content containing banned flame retardants could be prohibited from being recycled into new products.

***Require registration and reporting by producers*** and ***require producers to provide verification of recycled content claims*** through third-party certification or chain of custody documentation. This requirement will increase transparency and reliability of reported outcomes and will reduce the burden on the enforcement authority to verify claims made by regulated producers.

Consider aligning verification requirements with existing voluntary initiatives under development such as GreenBlue's Recycled Material Standard (RMS), the Cradle to Cradle Certified™ Product Standard, or the Assocation of Plastic Recyclers (APR) PCR Certification Program endorsements.

***Empower and sufficiently fund a regulatory agency to carry out rigorous oversight and enforcement.*** As with other outcome-based EPR policies recommended, recycled content requirements will require strong oversight to ensure compliance. The agency charged with oversight must have the dedicated resources to conduct compliance monitoring, and must have real enforcement powers to bring producers into compliance as needed. As noted in Recommendation 1, relying on dedicated funding generated from State tax revenue may be challenging given the economic crisis facing the State at this time. To address this, the policy should require producers to pay a registration or reporting fee as part of compliance requirements to cover the costs of oversight and enforcement.

## Necessary Infrastructure

Additional collection and sorting infrastructure will likely be needed to provide a reliable supply of recyclable material needed to achieve recycled content targets. Additional domestic capacity for plastics reprocessing and production of food-grade PCR is also needed.

If recycled content requirements are linked to EPR policy, this additional infrastructure development will likely be funded by producers as part of the EPR system. If there is no EPR policy in place, producers will need to find other avenues to assure infrastructure is in place to provide sufficient materials to meet the recycled content requirements.

## Associated Changes to Existing Regulations

While development of new statutes and (if warranted) rules will be needed following legislative policy action, no changes to existing regulations are expected to be necessary for implementation.

## Costs of Administration and Enforcement

If recycled content requirements were implemented as part of a larger EPR system for consumer packaging, the costs to the State for adminstration and enforcement would be covered under the EPR system as described in Recommendation 1 above. If adopted under a separate policy, implementation of recycled content requirements would require initial and ongoing involvement of a State regulatory agency, with adminstration and enforcement costs associated with initial staffing for program initiation and producer outreach, and ongoing staffing for compliance monitoring and enforcement. As with implementation of an EPR system, the State regulatory agency may incur additional initial costs related to development of the producer registry and data tracking system and potentially purchasing costs for industry data to facilitate initial outreach to notify producers of covered products of their obligations. These costs would be lower if implemented as part of an EPR policy. Depending on the specific language adopted, rulemaking may be required.

The costs to the State for administration and oversight would depend on the specific details of the statute adopted. For reference, 10.5 FTE (nine full-time positions and three part-time positions) at CalRecycle are dedicated to administration and enforcement of the rigid plastic packaging container (RPPC) law in place in California, which includes recycled content requirements and associated reporting by obligated producers. They also incur additional costs related to the development, support, and maintenance of the program database [27].

In its fiscal note on the recycled content requirements for plastic beverage containers (ESHB 2722) passed (and subsequently vetoed) in 2020, Ecology estimated such a policy for beverage containers only would require approximately one FTE to administer [28]. With expansion of the policy to cover all plastic packaging, it is anticipated that the level of State agency involvement would be somewhat higher.

Both initial and ongoing costs incurred by the State should be covered through producer registration fees. However, initial State expenditure would be required in advance of fee collection for producer outreach and to set up the producer registry database and fee collection mechanism if not implemented as part of an EPR policy or in advance under a separate policy (see Recommendation 4 and Recommendation 5).

## Other Costs and Benefits

The costs of meeting recycled content requirements would fall to plastic packaging **producers** and, to the extent producers pass on such costs through higher product prices, to **consumers** of goods with plastic packaging. As noted in *Recycled Content Use in Washington: Assessing Demand, Barriers, and Opportunities* (Task 2 report), the low cost of virgin plastic resins has been

cited as a major barrier to the voluntary use of post-consumer resin (PCR), due to its relatively higher cost. At least initially, then, it is expected that the recycled content requirements will increase packaging costs as producers will be required to purchase PCR, even if they are more expensive than virgin plastic resin, in order to meet mandated recycled content levels. However, many consumer packaged goods companies have already made voluntary public commitments to increase their use of recycled content in line with the levels recommended for mandatory adoption here. The implementation of a recycled content requirement would provide these producers the benefit of being able to meet their commitments, and potentially at lower costs than if they were to do so under a voluntary initiative, due to the marketwide effects that widespread demand pull for recycled content that a mandatory requirement would create.

Challenges associated with acquiring sufficient supply of PCR—particularly for food-contact applications—and with the quality of plastics available for reprocessing into PCR have also been identified as major barriers to increasing recycled content in plastic packaging. Addressing these challenges will require substantial investments across the plastics value chain. As the parties legally responsible for complying with recycled content requirements, producers will likely bear the majority of the costs of these investments, either through EPR systems and/or DRS programs, or through voluntary efforts to increase collection and improve the quality of collected materials.

Producers will also incur costs associated with material science research and development, technology investments to develop packaging formats, manufacturing processes, and recycling systems that can better support the production and use of recycled content. These investments will deliver benefits such as creating jobs, advancing the state of knowledge, and moving the packaging industry toward circularity, which many have publicly stated as a goal.

Producers will need to pay for certification of PCR to ensure they are in compliance and eliminate the potential for fraud. Producers will also need to cover the costs of State oversight to ensure a level playing field and for fair and effective enforcement.

Under a mandatory recycled content policy, producers that have already committed to using PCR will benefit from a more level playing field and fairer market conditions for achieving those goals, including access to a greater supply of PCR produced in response to greater and more reliable demand.

As noted above, as consumers, residents and businesses in Washington State may initially pay more for packaging with recycled content. However, as generators of plastic packaging waste and ratepayers for recycling services, **residents and businesses** may benefit from improved collection services and lower costs for those services as increased demand for PCR drives up investments in collection of plastic packaging waste and increases revenues generated from recyclable plastic packaging commodities.

Over time, prices for PCR may decrease as supply and production scales increase, reducing the costs of recycled content requirements on producers and consumers. Also, virgin prices may go up in the future as other climate pollution policies and plastic waste regulations are implemented at the State or federal level, making recycled content packaging comparatively less costly to producers and consumers.

**Recycling service providers** involved in collection, sortation, and reprocessing of plastic packaging waste will benefit from greater demand for their services in response to recycled content requirements. Demand for additional types and formats of PCR and recycled content packaging will create opportunities for new businesses and operations. The need for chain of custody documentation and verification of recycled content will benefit businesses in Washington State and other U.S.-based businesses that operate in accordance with health and safety protocols. Recycling activities also generally create more jobs compared to disposal and PCR production produces more jobs than virgin resin production [29].

Current and future Washington State residents and businesses will also experience significant **environmental and social benefits** if recycled content requirements reduce the substantial environmental and social costs associated with virgin plastic resin production, which are not currently appropriately reflected in the market price of virgin plastics.

Requirements around certification of PCR will also potentially reduce the export of plastic packaging waste and address the environmental harms and social injustices exposed in many plastics recycling operations in countries without adequate protections for human and environmental health.

Increased, and more visible, use of PCR will provide social, environmental, and practical benefits of increasing public confidence in the recycling system, potentially encouraging them to recycle more of the consumer packaging and paper they generate.

# Interim Recommendations

While a fundamental reimagining of the materials management system for plastic and other packaging is needed for a circular economy, there are several options that could be implemented separately and in advance to lay a foundation for a broader system transformation in the next few years. The two policies presented in this section represent components of the primary policies recommended above that could potentially be implemented on their own, as a first step toward legislative adoption of the full suite of primary recommendations.

## 4. Producer Registry and Packaging Reporting

### Recommendation

4. **Establish a packaging registry to enable efficient, reliable accounting of the amounts, types, and attributes of packaging sold into the state. Require producers to register and report the amounts, types, and attributes of packaging, including declarations of recycled content, in order to be allowed to sell their products into Washington.**

### Rationale

The authorizing legislation for this Study (Chapter 70A.520 RCW) called for "an assessment of the amount and types of plastic packaging currently produced in or coming into the state by category." Without a requirement that producers report these details to the State, it is impossible to undertake such an assessment.

In jurisdictions where EPR for packaging and recycled content requirements have been adopted, data collection to develop a list of obligated producers and quantify the packaging supply has been the first step in the program development process. Gathering data during an interim period while EPR and/or recycled content policy is being developed could help expedite the implementation timelines for such policies and can help better forecast estimated costs and benefits of these proposed policies compared to current conditions.

Data gathered on the number of producers and the relative quantities of packaging supplied would help inform the establishment of *de minimis* levels in relevant policies and determine the impact of *de minimis* exemptions.

Some producers have raised objections to state-level reporting due to the patchwork and burdensome nature of reporting different types of information to different states, rather than to a national registry, which would be more efficient and consistent. While it is true that a national or harmonized approach would have significant advantages, there is no such system in development and no such reporting requirement is expected at the national level in the near future. To enable forward action in Washington, establishment of such a registry at the state level is the only option. If designed and implemented well, Washington's approach could serve as a model for other states or even for a national system, should it eventually be adopted.

## Policy Design Considerations

***Require reporting by individual producers on packaging supplied into Washington State***, either directly or through a trade association, but with data broken down to the individual producer level. Although this data must be kept confidential and protected, the State regulatory agency should have direct line of sight and ability to audit data provided by all individual producers. This is the model under development in Ontario for producer reporting requirements as part of the province's transition to full individual producer responsibility for residential packaging and paper.

Require producers to report on quantity of packaging supplied into the state, broken out by product and material type, ideally reported by weight and by unit. Producers should also be required to break out the quantity reported by sector (residential/commercial) and describe how this sector allocation was estimated. Allow for estimation of quantity at the state level based on per capita allocation of national sales/supply data, if state-level data is not available.

***Require reporting by producers on PCR content of packaging supplied into Washington State.*** As with the requirement above, this reporting could be managed through a trade association, but reported data should be broken down to the individual producer level. Consider requiring reporting on total PCR content for each type of packaging supplied in pounds and as percent of total pounds of packaging supplied for each type. A similar requirement was adopted in California in 2016 (AB 2530) that required companies making beverages and selling them in the state to report virgin and post-consumer plastic use to CalRecycle. The policy was recently strengthened as part of the passage of recycled content requirements (AB 793) after it became clear that the initial reporting requirements were insufficient for gathering useful data. Companies are now required to report both virgin and post-consumer plastic use in pounds and on polymer type [30].

If implemented immediately, it is likely that third-party certification of PCR content claims could be optional because the systems for this are still in development. However, consider requesting such certification on a voluntary basis or offer an incentive, such as a discount on the initial registration fee, for providing it.

***Require producers to pay a registration fee to cover the costs of developing and overseeing the registry.*** The fee must be dedicated to administration of the registry and protected from redirection to other uses. Set a tiered fee schedule per producer and/or per packaging type reported, based on annual company revenue. Consider a preliminary fee exemption for small producers, such as those reporting less than one ton of packaging supplied into the state, until a final *de minimis* threshold can be established based on producer reporting.

***Consider housing the registry under the Recycling Development Center*** (the Center) within the Department of Ecology. The collection of data needed to support development of local and regional processing and markets for recyclable materials is a primary goal of the Center, as is collaboration with packaging producers to increase the ability of their packaging and products to be reduced, reused, or recycled.

## Necessary Infrastructure

The agency tasked with overseeing the packaging registry will need to develop the registry mechanism and database to manage information reported, including protocols for managing confidential information.

## Associated Changes to Existing Regulations

While development of new statutes and (if warranted) rules will be needed following legislative policy action, no changes to existing regulations are expected to be necessary for establishment of a producer registry for reporting purposes.

## Costs of Administration and Enforcement

Implementation of a producer registry and packaging reporting requirement will require the ongoing involvement of a State regulatory agency. Associated costs for adminstration and enforcement will primarily include initial staffing costs for producer outreach and program initiation, and ongoing staffing costs for compliance monitoring and enforcement. Additional costs are anticipated related to development of the producer registry and data tracking system and potentially for purchases of industry data to facilitate initial outreach to notify producers of covered products of their obligations. Depending on the specific language of the statute adopted, rulemaking may be required. At a minimum, it is expected that the State regulatory agency will need to develop guidance for producers on how and what to report.

The costs to the State for administration and oversight would depend on the specific details of the statute adopted, including the number of producers obligated to report based on the definitions and the type, quantity, and format of data required to be reported. For reference, in

California, where CalRecycle oversees the reporting requirement for producers of beverages in plastic containers that are subject to the state's DRS, approximately 1.5 FTE at CalRecycle are dedicated to administration and enforcement. Most of this time is spent contacting and following up with beverage manufacturers who fail to meet the required reporting deadline. CalRecycle redirects six staff positions full-time for a three-month period toward administration and enforcement [27]. With expansion of the policy to cover all packaging and implementation occurring in absence of an existing regulatory structure such as is in place with the DRS in California, it is anticipated that the level of State agency involvement in Washington would be somewhat higher.

As in the primary recommendations, it is recommended that this policy be designed to include producer registration fees to cover both initial and ongoing costs incurred by the State. Even with this funding mechanism, it is anticipated that initial State expenditure would be required in advance of fee collection for producer outreach and to set up the producer registry database and fee collection mechanism.

If a producer registry and packaging reporting policy is implemented in advance of the policies listed as primary recommendations, the cost to the State to administer and enforce this interim policy could reduce the subsequent costs for administration and enforcement of the primary policies recommended.

## Other Costs and Benefits

**Producers** will incur costs associated with gathering and reporting required data to the State regulatory agency. Producers will also be responsible for covering the costs of State development and administration of the registry.

**Recycling service providers**—especially sorting facilities, scrap plastics brokers, and plastic reprocessors—as well as **local governments** and **economic development officials**, may benefit from greater visibility into the types and quantities of packaging being supplied into the state to guide recycling collection programs, business development efforts, and investment decisions.

# 5. Recycled Content Requirements for Plastic Beverage Containers

## Recommendation

5. **Implement minimum post-consumer recycled content requirements specifically for plastic beverage containers in line with those passed during the 2020 legislative session (ESHB 2722).**

These requirements can be included within more comprehensive recycled content requirements legislation, as recommended under Recommendation 3, or can be adopted and implemented separately while EPR and/or broader recycled content policy is under development.

## Rationale

As noted in Recommendation 3, increasing recycled content is among the most important actions for reducing the environmental impacts of plastic packaging. Beverage containers make up a substantial portion of plastic packaging supplied into Washington (PET bottles alone represent one-quarter of all rigid plastic packaging), so an increase in recycled content in those will have a major impact.

In early 2020, the Washington State Legislature passed ESHB 2722, a bill relating to minimum recycled content requirements for plastic beverage containers. The bill was vetoed by the Governor due to concerns about its fiscal impact amid the COVID-19 pandemic, but the bill would have required that beverage containers sold in Washington have a minimum of ten percent post-consumer recycled plastic content by 2022, progressively increasing to 25 percent in 2025 and 50 percent in 2030.

This bill was supported or unopposed by major stakeholders, including waste haulers and beverage producers, as well as local governments and environmental nonprofits, and could presumably be passed again. A similar bill (AB 793) was recently passed in California, signaling broad continued interest in this policy approach.

Major beverage companies have already made voluntary commitments to achieve similar rates of PCR recycled content in beverage containers, but these efforts need support from the State to ensure a level playing field and to induce the investments needed across the plastic recycling chain to achieve these goals.

## Policy Design Considerations

The policy should build on the language of ESHB 2722 but **add a clear definition of post-consumer recycled content**. The definition of post-consumer recycled content from the International Organization for Standardization (ISO 14012:2016:7.8.1.1) is "a type of recycled content that comes from material generated by households or commercial facilities as end users of a product or package which the consumer determines to no longer be useful for its intended purpose. This includes returns of material from within the distribution chain."

The policy should also **require producers to provide verification of recycled content claims**, through third-party certification or chain of custody documentation. This requirement will increase transparency and reliability of reported outcomes and will reduce the burden on the enforcement authority to verify claims made by regulated producers. To ease the regulatory burden of this requirement and aid in compliance, consider aligning the verification requirements with existing voluntary initiatives under development such GreenBlue's Recycled Material Standard (RMS), the Cradle to Cradle Certified™ Product Standard, or the APR's third-party PCR Certification Program endorsements.

As with other recommendations for policies involving requirements that must be met by producers, with compliance demonstrated through producer reporting, it is recommended that the policy **require producers to pay a registration fee as part of compliance to cover the costs of oversight and enforcement** activities carried out by the designated State regulatory agency.

## Necessary Infrastructure

As noted in Recommendation 3, additional collection and sorting infrastructure will likely be needed to provide a reliable supply of recyclable material needed to achieve recycled content targets, especially for the higher levels required by 2030 under ESHB 2722. This infrastructure does not necessarily need to be located in Washington but could be.

## Associated Changes to Existing Regulations

While development of new statutes and (if warranted) rules will be needed following legislative policy action, no changes to existing regulations are expected to be necessary.

## Costs of Administration and Enforcement

Implementation of a recycled content requirement for beverage containers will require the ongoing involvement of a State regulatory agency. Associated costs for adminstration and

enforcement will primarily include initial staffing costs for rulemaking and program initiation, and ongoing staffing costs for compliance monitoring and oversight. Additional costs are anticipated related to development of the producer registry and data tracking system and potentially purchases of industry data to facilitate initial outreach to notify producers of covered products of their obligations.

The costs to the State for administration and oversight would depend on the specific details of the legislation adopted. As noted in Recommendation 3 above, the fiscal note on the recycled content requirements for plastic beverage containers (ESHB 2722) passed (and subsequently vetoed) in 2020, estimated such a policy for beverage containers only would require approximately one FTE to administer [28]. For reference, in California following the passage of AB 793, CalRecycle has allocated one FTE to support rulemaking and initial implementation as well as $500,000 in contract funds annually to review the minimum content standards. Eventually nine FTE will be dedicated to ongoing administration and enforcement [27].

Although not included in the bill passed in 2020, this recommendation (#5) suggests including producer registration fees to cover initial and ongoing costs incurred by the State. As with the other recommendations including this mechanism, some initial State expenditure would be required in advance of fee collection for producer outreach and to set up the database and fee collection mechanism if not implemented under a separate policy (see Recommendation 4 above).

## Other Costs and Benefits

The costs and benefits of a recycled content requirement for beverage containers only would be similar to those described for Recommendation 3 above. Because of the narrower scope of plastic packaging covered by this policy, both the costs and the benefits are expected to be smaller.

# Complementary Recommendations

The policies recommended in this section advance the legislative goals of Chapter 70A.520 RCW in ways that are complementary to the primary policy recommendations. The scopes and anticipated impacts of these policies are narrower than those of the primary policy recommendations.

## 6. Recycled Content Requirements for Trash Bags

### Recommendations

6. **A. Adopt minimum post-consumer recycled content requirements for plastic trash bags sold into the state.**

   **B. Require State procurement of plastic trash bags to be limited to products sold by companies that are in compliance with post-consumer content requirements.**

### Rationale

Due to efficiencies of protection and light weighting of packaging, the use of polyethylene (PE) film continues to grow and so its presence in the waste stream is also expected to grow. PE film is mechanically recyclable and has a viable collection infrastructure (via return-to-retail and reverse logistics), and there is desire by consumers for recycling options for this material. However, currently there is very weak demand for recycled PE film, especially from mixed retail and consumer-return sources. In order to achieve environmental benefits from recycling PE film, more market demand for and use of PE film as PCR recycled content is needed.

Under Chapter 70A.530 RCW passed into law in 2020, Washington State now requires 20 percent post-consumer recycled content in reusable plastic carryout bags and that will increase to 40 percent in 2022 [31]. The law's primary aim, however, was to reduce the overall use of plastic carryout bags, so it is expected that the impact on demand for PE film as PCR recycled content will be relatively small.

Trash bags are not considered "packaging" and so would not be covered by recycled content requirements for packaging (see Recommendation 3), but these bags use a significant amount of virgin plastic. Based on the list of manufacturers compliant with the California mandate, there

are many companies already in the marketplace showing that trash bags can be an excellent application for PCR PE film, including from mixed retail and consumer-return sources. Further, a recycled content mandate would reduce the net environmental impacts of trash bags beyond any efforts to reduce the amount of virgin plastic used in bags.

Requiring PCR recycled content in trash bags will drive the use of PE film collected for recycling, which will, in turn, stimulate market-driven development of collection infrastructure. This positive feedback loop has created demand pull for post-consumer recycled PE film in California, where a recycled content requirement for plastic trash bags has been in place since 1993 [32]. Innovations since then have led to companies using higher percentages of PCR content than the California requirement while also meeting the standards for trash bags, especially in other countries such as Germany and England. Cost of PCR is a barrier for most companies looking to displace virgin resin with PCR. The lack of value placed on PCR, the feedstock with a much lower environmental impact, has stymied the investment in collection and reclamation of PE film and, subsequently, its use as a feedstock in trash bags in absence of recycled content requirements.

According to national industry data, annual trash bag generation is equivalent to approximately 18 pounds per capita. For Washington State, that equates to approximately 65,790 tons. A requirement for 30 percent PCR, assuming a 20 percent yield loss on tons sent for reprocessing, could create demand for approximately 23,680 tons of post-consumer PE film, which represents approximately one-third of PE film tons currently disposed.

## Policy Design Considerations

***Include all plastic trash bags, with no exemption for specific millimeter (mil) thickness.*** It is likely that the specification of a minimum mil thickness threshold for PCR use requirements has resulted in a loophole in the California law, with some manufacturers producing trash bags just under the mil thickness threshold in order to avoid the requirement.

***Set recycled content targets that increase over time*** and/or establish a method (outside of legislation) for increasing targets in the future. Targets should be set to meet or exceed the requirements currently in place in California (10 percent actual post-consumer material use in trash bags made for sale in the state or 30 percent use by weight of post-consumer material in all plastic products intended for sale in the state). The ability to use PCR in bags will require innovation by many companies to achieve, therefore step-wise increases in requirements beyond 2025 will stimulate the innovation necessary to overcome current market constraints.

As with other recycled content policies, the policy must include the following elements:

***Clearly define what counts as post-consumer recycled content, how calculations are to be conducted, how compliance will be verified, and what the consequences are for non-compliance***.

***Require registration and reporting by producers*** and ***require producers to provide verification of recycled content claims*** through third-party certification or chain of custody documentation. As noted in Recommendation 3, this requirement will increase transparency and reliability of reported outcomes and will reduce the burden on the enforcement authority to verify claims made by regulated producers. Consider aligning verification requirements with existing voluntary initiatives under development such as GreenBlue's RMS, the Cradle to Cradle Certified™ Product Standard, or APR's third-party PCR Certification Program endorsements.

***Empower and sufficiently fund a regulatory agency to carry out rigorous oversight and enforcement.*** As with other recycled content policies recommended, require producers to pay a registration fee to cover the costs of oversight and enforcement.

***Require State procurement to be limited to compliant bags***. A similar policy (RCW 43.19A.022) is already in place for procurement of office paper.

## Necessary Infrastructure

No additional infrastructure is expected to be needed immediately, as commercial collection of PE film is already in place to some degree and is responsive to market signals for expansion. Specifically, reverse logistics systems for PE film collection are already in place for most large grocers and large retail chains. More customer-facing collection systems will be required for widespread, convenient access for residents and additional collection systems will be needed for small-to-mid-size commercial generators of PE film without their own reverse logistics operations. The demand pull (in the form of higher commodity prices for post-consumer PE film bales) would create market-driven investment in this infrastructure, which existed previously in many Washington State locations before the Chinese ban of scrap plastic imports and the collapse of virgin resin prices.

Trash bag producers may need to support expansion of collection infrastructure of PE film generated by residential households (building on the existing voluntary return-to-retail system or in coordination with an EPR system) and invest in resident engagement in order to generate sufficient PCR to meet the increased requirement by 2025, if supply from commercial and customer-returned sources is not sufficient.

## Associated Changes to Existing Regulations

While development of new statutes and (if warranted) rules will be needed following legislative policy action, no changes to existing regulations are expected to be necessary for adoption of a recycled content requirement for plastic trash bags.

Linking the recycled content requirement to State procurement practices will likely require changes to Chapter 43.19A RCW, Chapter 39.26.255 RCW, WAC 200.300.085, and Department of Enterprise Services Policy No. POL-DES-255-00.

## Costs of Administration and Enforcement

As with other recommendations related to recycled content requirements, implementation of a recycled content requirement for trash bags will require the ongoing involvement of a State regulatory agency. Associated costs for adminstration and enforcement will primarily include initial staffing costs for program initiation, and ongoing staffing costs for compliance monitoring and oversight.

The costs to the State for administration and oversight in Washington will depend on the specific details of the statute adopted. The resources required for this policy are expected to be lower than for other recommended policies related to recycled content requirements because the number of obligated producers and covered products is expected to be smaller. For reference, in California, where CalRecycle oversees the recycled content requirements for trash bags supplied into the state, the program shares staffing resources with the RPPC program, which is supported with nine full-time positions and three part-time positions, to conduct compliance monitoring and oversight [27]. They also incur additional costs related to the development, support, and maintenance of the program database.

As with other recommendations that involve requirements on producers that involve registration, reporting, and compliance monitoring overseen by the State, this recommendation suggests including producer registration fees to cover initial and ongoing costs for administration and enforcement. As with the other recommendations, it is expected that some initial State expenditure would be required in advance of fee collection for producer outreach and to set up the database and fee collection mechanism.

## Other Costs and Benefits

The costs and benefits of a recycled content requirement for trash bags would be similar to those described for Recommendation 3 above, though the costs would primarily be incurred by producers of plastic trash bags rather than packaging producers.

At least initially, **producers** of trash bags may need to pay more for PCR plastic feedstock in order to meet mandated recycled content levels, and may also need to invest in collection infrastructure to capture more recyclable plastic film to use as recycled content feedstock. Producers will need to pay for certification of PCR to ensure they are in compliance and eliminate the potential for fraud. Producers will also need to cover the costs of State oversight to ensure a level playing field and for fair and effective enforcement.

As noted above, as **consumers**, residents and businesses in Washington State may initially pay more for trash bags with recycled content. Over time, however, prices for PCR may decrease as supply and production scales increase, reducing the costs of recycled content requirements on producers and consumers.

As generators of plastic packaging waste and ratepayers for recycling services, **residents** may benefit from greater access to convenient drop-off film collection locations or other alternative collection pathways for recyclable film and flexible plastic packaging. Residents may also benefit from lower system costs due to reduced contamination of recycling loads from film and flexible plastics. **Businesses** that generate plastic packaging waste may benefit from improved market conditions for recyclable film plastics collected through reverse logistics or private recycling services, and may experience a decrease in garbage costs due to avoided disposal.

**Recycling service providers** involved in sorting and reprocessing of commingled recyclable materials will benefit from lower system costs and improved commodities quality due to reduced contamination from film and flexible plastics. As under other recycled content requirements, a PCR mandate for trash bags is expected to stimulate demand for recycling services and technologies, creating opportunities for new businesses and operations.

**Local governments** may also benefit from reduced demands on their staff for contamination reduction activities if producer-funded consumer outreach stimulated by demand pull motivates more residents to participate in drop-off programs for film rather than contaminating curbside recycling streams with it.

Like other recycled content recommendations, these requirements have the potential to deliver significant **environmental and social benefits** if recycled content requirements reduce the production and use of virgin plastics.

# 7. Ban on Problematic and Unnecessary Plastic Packaging

## Recommendation

**7. Ban plastic packaging identified as problematic or unnecessary through public-private initiative.**

## Rationale

The U.S. Plastics Pact—a public-private partnership, in which Ecology is a founding partner—has a stated intent to develop a list of "problematic and unnecessary plastic packaging" by December 2021, with a goal to eliminate identified materials by 2025. The process of developing the list will involve first defining what "problematic and unnecessary plastic packaging" means and establishing criteria or parameters for assessing which types or attributes of plastic packaging should be eliminated.

Research on policy and technology options from around the world to manage plastic packaging (see Task 3 report: *Successful Plastic Packaging Management Programs and Innovations*) generally found that material- and product-specific bans can sometimes result in negative unintended consequences due to material substitutions that increase overall environmental impacts. Bans can also be resource-intensive to implement because their effectiveness depends on strong enforcement. These concerns were echoed by stakeholder respondents in the survey of policy and technology options for managing plastic packaging conducted as part of the Study. However, adoption of bans based on a list of materials developed and broadly agreed upon through public-private initiative could avoid some of these issues and would make it more feasible to achieve elimination of the problematic and unnecessary plastic packaging identified.

Voluntary effort by producer members of the U.S. Plastics Pact alone cannot eliminate these materials completely, so the State could advance the Pact's goals by mandating elimination by all producers through legislative action. Mandatory elimination would create a level playing field and correct for the potential of voluntary initiative to disadvantage companies that would take action.

## Policy Design Considerations

Ideally, the list of problematic or unnecessary plastic packaging to ban will be the result of a consensus-based public-private initiative so that it has broad support among stakeholders and

potential impacts of the bans have been addressed. If the U.S. Plastics Pact is not able to finalize a list or if it is not sufficiently robust, the State could nonetheless proceed with implementation of a ban based on its learnings through participation in the dialogue.

## Necessary Infrastructure

No changes to existing infrastructure are expected to be necessary for implementation.

## Associated Changes to Existing Regulations

While development of new statutes will be needed following legislative policy action, no changes to existing regulations are expected to be necessary for implementation of a ban on problematic or unnecessary plastic packaging, so long as appropriate consideration has been made for items that are deemed medically necessary or otherwise essential under existing laws.

## Costs of Administration and Enforcement

The Washington State Department of Ecology is already committed to participating in the U.S. Plastics Pact as a founding member, so participation in the development of the list of problematic and unnecesary plastics is not expected to require additional resources beyond those already committed.

Once the list of plastics identified for elimination is established through the U.S. Plastics Pact, or if a separate list is established by Ecology following its participation in the Pact, implementation of mandatory bans on identified items will incur State administration costs associated with program initiation as well as for ongoing administration and enforcement.

Based on the experience of implementing the recently passed single-use plastic bag ban, it is assumed that rulemaking would not be required. Following implementation, the State regulatory agency would incur costs for outreach and compliance monitoring, though these costs are likely to be concentrated in the initial year or two of implementation.

Unlike all preceding policy recommendations, administration and enforcement costs of this policy would not be covered by producers through registration and reporting fees and would need to be funded through State revenue sources.

## Other Costs and Benefits

**Producers** of products and materials included on the list of items to be eliminated will incur costs associated with lost sales and/or product redesigns undertaken to achieve compliance with the bans.

As **consumers**, Washington State residents and businesses may experience increased costs of products due to material substitutions required as a result of the bans. However, as generators of plastic packaging waste and ratepayers for recycling services, **residents and businesses** may benefit from lower service costs due to elimination of plastics that are problematic and disruptive to recycling systems.

Residents and business in Washington may also experience **environmental and social benefits** from reduced litter and marine debris, reduced environmental toxicity, or other impacts potentially resulting from material bans, depending on the nature of bans and attributes of banned materials.

# 8. Standard for Customer Opt-in for Foodservice Packaging and Accessories

## Recommendation

8. **Establish a statewide standard for customer opt-in for inclusion of non-essential disposable foodservice packaging and accessories.**

## Rationale

Non-essential disposable foodservice packaging and accessories—such as condiment packets, plastic cutlery, and straws—are often included in takeout and delivery orders by default, resulting in significant waste of unwanted plastic packaging and foodservice accessories. Establishing a statewide standard for customer opt-in would provide clarity and guidance to businesses for when these items should be provided to customers and would stimulate standardization of ordering systems and order preparation protocols to involve verification of customer opt-in for inclusion of these items in orders. Several bills in the 2019 and 2020 legislative sessions included this policy idea, though none of them advanced.

## Policy Design Considerations

For disposable foodservice packaging and accessories, the State should ***establish a statewide standard requiring customer opt-in for inclusion of non-essential disposable foodservice packaging and accessories***—such as condiment packets, plastic cutlery, and straws—in takeout and delivery orders. This could involve providing model ordinance language to local governments or adopting a statewide requirement for customer opt-in practices by foodservice businesses.

The policy should cover orders placed through third-party takeout ordering/delivery services.

Any statewide policy adopted should be established as a minimum standard but should not preempt the authority of local jurisdictions to enact additional regulation of non-essential disposable foodservice packaging and accessories.

## Necessary Infrastructure

No changes to existing infrastructure are expected to be necessary for implementation.

## Associated Changes to Existing Regulations

While development of new statutes and (if warranted) rules will be needed following legislative policy action if a statewide standard is pursued in statute, no changes to existing regulations are expected to be necessary for implementation.

## Costs of Administration and Enforcement

Whether established through local ordinances or State statute, enforcement of a standard for customer opt-in for non-essential disposable foodservice packaging and accessories would be expected to be carried out by local health departments using existing resources as part of their established role in regulation of foodservice establishments. The Department of Ecology could contribute to implementation through education and outreach and by providing technical assistance to local health departments using existing staff and resources. The fiscal note from a legislative bill containing similar provisions that was considered in 2019 (SHB 1632 FN) found the bill to have no fiscal impact on State agencies. It is expected, however, that local governments may need additional resources in order to implement these requirements along with those already assigned.

## Other Costs and Benefits

**Restaurants and foodservice businesses**, including third-party ordering and delivery platforms, would incur initial costs associated with developing opt-in systems to enable customers to request non-essential disposable foodservice packaging and accessories as part of their order, and training staff on opt-in protocols. Once established, opt-in systems would likely result in cost savings for restaurants and foodservice businesses due to lower distribution of non-essential disposable foodservice packaging and accessories, which are currently provided to customers at no additional charge.

**Producers** of non-essential disposable foodservice packaging and accessories would likely experience lower sales in Washington State as a result of customer opt-in standardization.

**Recycling service providers** may experience reductions in contamination in recycling loads, as residents often attempt to recycle these unwanted and generally non-recyclable items.

Transitioning to a customer opt-in standard would likely deliver **environmental and social benefits** associated with reductions in litter and waste.

# Recommendations for Agency Action

The recommendations in this section cover activities undertaken by the Department of Ecology that do not require legislative action to implement. They may, however, require reallocation or additional allocation of resources to fund agency implementation.

## 9. Strengthen Data Collection on Final Destinations of Materials Sent for Reprocessing

### Recommendation

9. **Clarify, expand, and more effectively collect data requested from regulated recycling facilities on the final destinations of materials sent for reprocessing.**

### Rationale

The authorizing legislation for this Study (Chapter 70A.520 RCW) called for "an assessment of the final disposition of all plastic packaging sold into the state, based on current information available at the department." Review of information reported by regulated recycling facilities to Ecology revealed significant gaps in data needed to conduct such an assessment. Gaps included both incomplete or non-response to explicitly requested data as well as gaps due to lack of inclusion or clarity in data requests issued by Ecology.

Although Ecology does not have authority to regulate commodities sent for reprocessing and therefore cannot conduct the level of oversight needed to verify reporting of the final disposition of plastic packaging (such as conducting audits or inspections), it does have authority to request additional information from regulated recycling facilities, including both facilities operating under solid waste handling permits and those exempt from permit requirements under the rules governing recycling and material recovery facilities (WAC 173-350-210). Ecology can improve its current data collection forms and activities to increase the availability and reliability of information provided.

## Policy Design Considerations

To more effectively collect data on the final destinations of materials sent for reprocessing, Ecology should ***make adjustments to the format and content requested in annual recycling reports required from regulated recycling facilities*** under WAC 173-350-210. Specific recommended changes include:

- Expand the list of material type definitions to include additional categories of plastic packaging ideally aligned with the categories used in this Study. At a minimum, the categories used should be refined and expanded to align with the types of commodities typically produced, including differentiation between natural and colored HDPE (#2), separate reporting of PP (#5) from mixed rigid plastics when it is sorted as such, greater detail on plastic film commodities produced, and the option for separate reporting of polystyrene foam when produced as a commodity.
- Clarify and expand final destination reports and specifically request that reporting on destinations for materials sent for reprocessing be provided separately for each receiving company/destination, and include the location (city, state/province, and country) and total tons sent to that location for each unique material type reported.
- Request reporting of estimated average contamination of material sent for reprocessing and composting for each unique material type reported.

Because a majority of plastics sent for reprocessing move through a relatively small number of regulated facilities in the state—*Plastic Packaging in Washington: Assessing Use, Disposal, and Management* (Task 1 report) identified nine primary MRFs in the state where sortation of mixed recyclables, including plastics, into marketable commodities occurs—the additional burden of gathering this information will largely be concentrated on a small subset of facilities that submit annual recycling reports.

## Necessary Infrastructure

Ecology will need to revise the forms used for data reporting by regulated recycling facilities and the annual recycling survey and will need to devote additional staff time and resources to follow up with regulated facilities to clarify or complete missing information. Ecology is already transitioning to an online data reporting portal and associated database for securely managing confidential data. This new platform will facilitate more efficient data reporting, analysis, and compliance monitoring and will enable expansion of requested data, as described above, more easily than the previous paper-based reporting and manual data entry process.

## Associated Changes to Existing Regulations

The Department of Ecology is already authorized to make changes to reporting forms and request additional information from regulated recycling facilities under WAC 173-350-210, so no changes to existing regulations are expected to be needed.

If it is found that regulated recycling facilities do not readily provide the additional data requested or continue to provide requested information in a manner that is difficult to interpret or validate, legislative action may be necessary to compel more complete and verifiable reporting from regulated recycling facilities and others involved in handling recyclable materials in the state.

## Costs of Administration and Enforcement

Although data collection from regulated and unregulated recycling facilities is already established in statute as a responsibility of the Department of Ecology, funding and allocation of staff resources has shown to be insufficient to provide the extent of outreach, data management, and follow-up needed to gather complete and useful information on the destinations of materials sent for reprocessing. Fiscal impacts due to the COVID-19 pandemic, including the statewide agency hiring freeze, have further limited Ecology's ability to carry out its responsibilities in this area.

To strenghten data collection on the final destinations of materials collected for recycling moving forward, it is anticipated that allocation of one to two additional FTE will be needed.

## Other Costs and Benefits

Because regulated recycling facilities are already required to submit annual reports including data on the final destinations of materials sent for reprocessing, this recommendation is not expected to meaningfully increase the costs associated with data reporting that are already incurred by these facilities.

**All stakeholders in the recycling value chain**—from packaging producers to local governments, residents, and businesses, and even recycling facilities themselves—will benefit from greater transparency around the final destinations of materials sent for reprocessing. Recent exposés on the environmental and social injustices experienced from the unsafe and irresponsible management of plastics exported for "recycling" has undermined public confidence in the recycling system and raised questions about the benefits of recycling plastics in particular. By reporting more transparent and specific information about where materials collected for recycling end up and how they are handled, recycling service providers can assure

State and local governments and the public that materials collected for recycling are responsibly managed and that collection of plastics for recycling does indeed deliver environmental benefits. More specific data about the final destinations of recyclable materials may also benefit businesses interested in acquiring feedstocks for manufacturing activities and searching for potential suppliers of their material of interest.

# 10. Support Development and Adoption of Reusable Packaging Systems

## Recommendations

**10. A. Prioritize support for development and adoption of reusable packaging systems that facilitate safe, scalable transitions from single-use packaging through existing State grant funding and agency programs and staff.**

**B. Identify and eliminate potential barriers to adoption of reusable packaging systems in existing State and local regulations.**

**C. Identify opportunities for support of reusable packaging systems through public procurement.**

**D. Consider future adoption of statewide requirements related to use of reusable foodservice and packaging systems.**

## Rationale

While this approach would necessarily require shifting funds away from other areas of need, prioritizing the support for reuse using existing State grant funding and agency programs and staff has the potential to move the agency's focus higher up the waste management hierarchy at a time when allocation of additional tax revenue for grant funding and agency staffing is unlikely.

Reusable packaging systems that align with contemporary consumption patterns and newly available technologies are emerging but are not yet commercialized or fully developed for implementation at scale [33]. More State support for development and adoption would help bring the most promising models closer to widespread implementation in Washington. While greater use of reusable packaging systems could be supported through EPR and DRS policies, there are also actions that could be taken outside of those policy approaches to advance the transition to reusables and to facilitate economic development in this growing sector.

While it is assumed that the design and development of reusable packaging systems will be primarily led by the private sector, the public sector (especially through food safety regulations and public procurement policies) already has involvement in regulation and procurement and

can direct that involvement to support reusable packaging. The State and local governments also play a role in providing economic development support and technical assistance to businesses, and would be well-suited to leverage those ongoing areas of work for this purpose.

Restaurants and the foodservice industry overall are highly impacted by the COVID-19 pandemic. While research reaffirms that reusable packaging can be at least as sanitary as disposable items and that reusable packaging delivers important environmental benefits, reusable packaging systems are currently not broadly available at reasonable cost compared to single-use options. For this reason, requirements on their use in foodservice settings are not recommended for implementation by January 1, 2022 but should be further considered for adoption within two to five years.

In the near term, other areas of commerce are also potential candidates for reusable packaging systems. The Ellen MacArthur Foundation has stated that about 20 percent of all single-use plastic packaging could be made reusable/refillable through design and system changes. It has identified four primary forms for reusable/returnable/refillable packaging—refill at home, return from home, refill on the go, return on the go—and these can also be characterized by refill by business and refill by consumer actions [33]. Many of these opportunities lay outside of foodservice applications such as packaged foods and beverages, cooking essentials, and home and personal care products. Transition to reusable packaging systems for these items will likely rely on business leadership, but State and local governments can facilitate and nurture these transitions through funding or financial incentives, participation in pilot projects, economic development assistance, and addressing regulatory barriers to implementation.

## Policy Design Considerations

***Prioritize funding provided for projects that advance or adopt safe, scalable transitions from single-use plastic and other packaging*** through Waste Reduction and Recycling Education (WRRED) grants, Public Participation Grants (PPG), and Local Solid Waste Financial Assistance (LSWFA) grants.

***Conduct a review of State and local ordinances and regulations*** to assess if any interfere with the development and adoption of reusable packaging systems. Where barriers are identified, consider pursuing statewide policy to address those barriers while addressing the concerns of local governments.

***Assess where opportunities exist to support reusable packaging systems through public procurement, economic development support, and technical assistance***. Where public procurement opportunities are identified, work with the Department of Enterprise Services to establish guidance, incentives, or requirements for selection of reusable options. Engage the Department of Commerce in a review of opportunities to provide economic development

support for reusable packaging businesses. Collaborate with local governments to determine how and where existing business assistance programs can provide greater support for reusables transitions.

***Study options for future adoption of statewide incentives or requirements related to use of reusable foodservice and packaging systems*** that reduce consumption of single-use plastic packaging and reduce the cost burden of providing these items on restaurants and other foodservice businesses. Examples of policies to consider include requiring reusable foodservice products for all onsite dining, and requirements or incentives for the use of reusables at large events. Note that all policies must be consistent with the federal Food, Drug and Cosmetic Act (21 U.S.C. Sec. 301 et. seq.).

## Necessary Infrastructure

Initially, changes may be needed to State grant funding guidelines and application forms to demonstrate greater emphasis on reusables. Over time, implementation of reusable packaging systems will require additional investments in infrastructure, including for commercially-managed systems for distribution, return, and sanitation of reusable packaging. Much of this will be undertaken by the private sector, but may require public sector support to address health code barriers and other regulatory challenges to development.

## Associated Changes to Existing Regulations

The Department of Health is already considering food safety code changes to allow customer-provided reusable takeout containers; these changes are expected to be adopted in October 2020, and would go into effect July 2021.

Other State or local food safety code or other regulatory changes may be needed to remove barriers to adoption of new models of reusable packaging systems – more research will be needed in this area as new models arise.

## Costs of Administration and Enforcement

Support for development and adoption of reusable packaging systems can be prioritized using existing State grant funding mechanisms and through programs and staff at the Departments of Ecology and Commerce. Doing so, however, will necessarily mean that some programs and services currently being provided through these funds and resources will be reduced or eliminated. Additional FTE allocation to Ecology and increased grant funding would ensure that meaningful support for development and adoption of reusable packaging systems can be

achieved without negatively affecting existing areas of program work and grant funding delivered by Ecology to local governments across the state.

## Other Costs and Benefits

While adoption of reusable packaging systems often requires up-front capital investment, switching to reusables can often result in net savings, especially for **restaurants and foodservice businesses**. Case studies from several restaurants in California documented annual net savings ranging from $1,700 up to $25,000 after switching to reusables for dine-in service [34]. Financial and technical assistance could help more restaurants and foodservice businesses realize these cost savings.

Support for development and adoption of reusable packaging systems by Ecology could also benefit a range of **new and existing businesses involved in supplying or managing reusable packaging systems** that are looking to establish operations in a region with supportive policies and assistance programs for growing the reusable packaging industry.

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