Extended Producer Responsibility Policy Framework and Implementation Model:

Residential Recycling of Packaging and Paper Products in Washington State

King County
Department of
Natural Resources and Parks
Solid Waste Division

Waste **Prevention** | *Resource* **Recovery** | *Waste* **Disposal**

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Seattle Public Utilities

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The Responsible Recycling Task Force

The Responsible Recycling Task Force (RRTF) was formed by King County's Solid Waste Advisory Committee (SWAC) and Metropolitan Solid Waste Management Advisory Committee (MSWMAC) in April of 2018 to respond to changes in international recycling markets and to develop a coordinated approach to improving recycling in the region. The task force consists of representatives from the King County Solid Waste Division, the City of Seattle, cities in King County, solid waste management companies, and other stakeholders. This report was prepared for the RRTF by the King County Solid Waste Division in collaboration with Seattle Public Utilities.

Contact and Information

For more information on the Responsible Recycling Task Force and the resulting recommendations, go to the Responsible Recycling Task Force website.

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Executive Summary

A New Chapter for Recycling in Washington State

Residential recycling programs across the United States are facing unprecedented challenges and the programs in King County are no exception. For years, recycling programs have relied on international export markets to process our materials. When the "China Sword" international restrictions on exports of recyclable materials went into force in January 2018, the markets for mixed paper and plastics evaporated. The lack of markets for these materials, increased contamination and the introduction of difficult-to-recycle packaging materials has challenged the viability of our recycling programs. It is time to write a new chapter for recycling in Washington State.

In other countries, Extended Producer Responsibility (EPR) policies are being adopted to create recycling "systems" that are more sustainable than local government-run programs. EPR systems are funded by the producers of the packaging and paper products (PPP) that comprise the bulk of our curbside recyclable materials. EPR has gained increasing support in the U.S. over the past decade as a viable, sustainable solution to residential recycling challenges.

EPR is a mandated policy that shifts the responsibility for end-of-life management of products and packaging upstream to producers – rather than the public sector – and creates incentives for producers to incorporate environmental considerations into the design of their products and packaging.

The EPR Policy Framework and Implementation Model

This study explores an EPR Policy Framework that would be required in state law to support the implementation of a statewide EPR system for PPP from residents. The study provides a conceptual model that illustrates how the EPR policy framework could be implemented across Washington State.

The implementation model would create a new role for the producers of PPP by mandating that they fund and coordinate the statewide recycling system for residents. This shifts the responsibility from local governments—who have no control over the materials that enters the marketplace and subsequently the waste stream—to those that design, manufacture, and profit from the products and their packaging. The producers would operate under a Producer

EPR Policy Framework Elements

A mandated EPR policy should consider these elements, at a minimum:

- Producers of PPP are required to fund and coordinate the recycling (i.e. collection, transportation, sorting, and marketing) of materials from the residential sector.
- Producers are authorized to form a "Producer Responsibility Organization" (PRO) to manage the responsibilities established in the policy.
- Stewardship plans are developed with mandatory public consultation.
- Eco-modulated fees are used to drive changes in packaging design.
- A statewide uniform list of materials must be collected/recycled.
- Residents across the state must have convenient, equitable access to recycling collection service.
- Producers must achieve material-specific recycling rate requirements by specific timelines.
- Producers must use post-consumer recycled materials in products/ packaging to stimulate demand for materials.
- Required documentation and verified end markets for materials.
- A legislated "regulatory authority" that has authority to monitor compliance and enforce legal requirements.

Responsibility Organization (PRO) that coordinates and oversees the recycling system.

Costs and Financing

Currently most residents pay for residential recycling through their garbage or recycling rates. Under this EPR system model, residents would no longer be charged for curbside recycling service. The producers would finance the recycling system by internalizing the costs into the product/packaging prices. The PRO would set and collect the fees, contract and pay for recycling collection and post-collection services.

Recycling Collection

Under the EPR model, all residents (single-family and multi-family) would receive convenient, consistent and equitable recycling services for a common list of materials. Residents that receive curbside garbage service would also receive curbside residential recycling service. Residents in rural areas that do not have curbside garbage service would gain access to a more extensive network of recycling drop-off locations.

Cities and counties would have several options for how they participate in the model EPR system. They could continue to provide collection service with a reimbursement of their costs by the PRO or they could authorize the PRO to provide the collection service. The EPR system only covers recycling services. Garbage and organics collection services would remain the responsibility of local governments and private collection service providers.

Post-Collection Processing and Markets

Under the EPR policy, producers would be responsible for achieving statewide residential recycling rate requirements for each specific material type (such as paper and cardboard, rigid plastic, film plastic, glass, aluminum, and steel). Producers could be fined for failing to achieve the material-specific recycling rate requirements in accordance with the timeframe established in the policy.

The PRO is incentivized to ensure that PPP materials are sorted into marketable commodities that have reliable end markets. The PRO would contract for sorting and marketing services separately from the collection contracts. They would pay to have the materials sorted and marketed, and receive any revenues that are realized from the sorted materials. This transfers the risk associated with commodity price fluctuations to the PRO/producers.

Under the existing system, local government-run recycling programs do not have a method for verifying the end markets for the recyclable materials. As part of the model EPR system, the PRO would be responsible for providing verifiable documentation and third-party assurance that materials collected are in fact being responsibly recycled and delivered to reprocessors or end users that meet standards for protection of human health and the environment.

Recycled Content

To stimulate demand for the recyclable materials that are collected by the system, producers would be required use recycled content materials in their products or packaging. Material specific requirements would be set in the EPR policy and could be met by producers individually or collectively. This would create a more circular economy by completing the recycling “loop”.

Compliance and Enforcement

The EPR policy would establish a "regulatory authority" to enforce the EPR policy. The authority would be responsible for maintaining a registry of producers and verifying compliance with all requirements in the policy with the goal of providing transparency about the fate of packaging and paper sold into Washington State's residential marketplace.

Benefits of an EPR System

- **EPR can revitalize Washington's stalled recycling rates.** Despite repeated commitments by the state and local governments to increase recycling, recycling rates in Washington State have stalled. In contrast, residential recycling of PPP in British Columbia, Canada under an EPR system has seen steady improvement since EPR implementation in 2014, with collection rates for PPP increasing from between 50-57% prior to EPR to 78.1% in 2018, and aiming even higher moving forward.
- **EPR provides the resources and coordination needed to modernize Washington's recycling programs.** Asian markets for Washington State recyclables have effectively closed, competition for reliable domestic end markets is intense, contamination rates are up, and difficult-to-recycle materials are added to the system regularly. These external factors have increased recycling costs for local governments and their rate payers, causing programs to reduce the materials they accept or dismantle programs entirely. In contrast, the Recycle BC EPR system has increased service to rural and underserved communities and offers service to 98% of its residents and at the same time has expanded the list of materials that can be recycled.
- **EPR stimulates infrastructure investments and innovation.** Recycling needs investments and rapid deployment of technologies and equipment to meet the stringent quality standards demanded by the remaining end markets for recyclable materials. In addition, Washington's local reprocessing infrastructure for mixed paper and plastics is insufficient to make up for the lack of Asian markets. Efforts in Canada and parts of Europe—catalyzed and required by EPR policies—have resulted in major investments in new technologies and new end markets that have led to increased recycling rates, reduced greenhouse gas emissions, and local "green" jobs.
- **EPR engages consumer product companies that have set voluntary circular economy goals.** Many major brand owners have publicly announced the adoption of circular economy goals, including goals to increase recycling and the use of recycled content in packaging. An EPR policy provides a clear path forward to meeting these goals.
- **EPR is a proven, successful recycling policy approach.** EPR for PPP already exists or is under development in most European countries and Canadian provinces and is being rapidly adopted by nations around the globe. Many U.S. states, including California, Indiana, Massachusetts, Maine, New York, Oregon, Vermont, and Washington are pursuing legislation or researching EPR for PPP policies, and Federal legislation was introduced in February 2020.

Glossary of Key Terms

Domestic: The United States or Canada.

Extended Producer Responsibility (EPR): A legislated type of product stewardship that requires product manufacturers/brand owners to take responsibility for reducing the environmental and financial impacts of their products and packaging across the entire product management lifecycle, including taking responsibility for material recycling and end-of-life management. There are two important features of EPR policy:

1) Shifting financial and management responsibility – with government 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.

Packaging: For this study, the definition of "packaging" is drawn from the latest update to the EU's Packaging Directive (2018), and is defined as "all products made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods, from raw materials to processed goods, from the producer to the user or the consumer." Packaging is typically differentiated into the following categories:

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.
b) Grouped packaging or secondary packaging intended to brand or display the product.
c) Transport packaging or tertiary packaging intended to protect the product during transport.

Paper Products: For this study, the definition of "paper products" is drawn from the most recent Recycle BC stewardship plan, and is defined as "Paper or any other type of cellulosic fiber of any description (including flyers, brochures, booklets, catalogues, telephone directories, newspapers, magazines, paper fiber, and paper used for copying, writing, or any other general use) except for paper products that, by virtue of their anticipated use, could become unsafe or unsanitary to recycle, or any type of bound book not mentioned above.

Packaging and Paper Products (PPP): PPP includes all the materials that brand owners use to package everything from cereal and cleaning supplies to bottled water and shampoo, as well as junk mail and grocery bags. PPP materials are the focus of the EPR programs covered in this report. EPR for PPP programs referred to throughout this report cover residential PPP materials, i.e., PPP materials that are designed to be disposed or recycled at home by consumers.

Producers: For this study, a "producer" is defined as the Brand Owner or title-owner or licensee of those rights of a given paper product or packaged product for the regulated market (regardless of whether the activity takes place in the regulated market); or, if there is no identifiable Brand Owner or title-owner/licensee, the producer is the entity that manufactures, packs or fills the products; or, if there is no identifiable manufacturer, the producer is the First Importer of the product into the regulated market.

Producer Responsibility Organization (PRO): A non-profit organization formed in response to adoption of an EPR policy that represents and acts on behalf of obligated producers in the development of stewardship plans and implementation of EPR systems responsible for achieving the obligations of producers established in the adopted policy.

Reprocessing: The process after material sorting whereby sorted materials are transformed into a refined state, such as resin-specific plastic flakes or pellets, prior to being remanufactured into a new product.

Sorting: The process of taking mixed recyclable materials and separating them into specific commodities that can be sent to a reprocessing facility or end user. For the commingled recycling system, sorting takes place at a Materials Recovery Facility (MRF).

Introduction

Background

In April 2018, King County's Advisory Committees set up a Responsible Recycling Task Force (RRTF) to identify a range of actions in response to the reduction in export markets for mixed recyclable materials due to China National Sword policies. The long-term goal was to establish commitment across the region to responsible recycling and domestic sorting of residential recyclables.

The Task Force included representatives from the King County Solid Waste Division, the City of Seattle, cities in King County, solid waste management companies, and other stakeholders.

In January 2019, the Task Force published a Recommendations Report that prioritized the list of actions to be taken by all stakeholders. The top **Action Item (1A)** in the list of recommendations was to:

> ***Develop a comprehensive, statewide stewardship policy approach that helps achieve a funded, robust, and harmonized residential recycling system throughout Washington State.***

This study is the outcome of Action Item 1(A). The focus is on residential recycling only and covers recyclable materials comprised of packaging and paper products (PPP). It does not address recycling from the commercial sector.

This study is divided into two parts:

Part 1: The EPR Policy Framework

Part 1 describes the statewide EPR policy framework that would be required in state law to support the implementation of a statewide stewardship system for residential packaging and paper products (PPP). The goal of the policy framework is to maximize the recovery and responsible recycling of PPP from the residential sector and increase the use of recycled materials in new products using a producer-funded stewardship approach, also known as extended producer responsibility (EPR).

Part 2: The Implementation Model

Part 2 offers a conceptual look at how the EPR policy framework could be implemented in Washington State. The conceptual model is structured to minimize stranded assets and build upon and enhance the current residential recycling infrastructure. It includes scenarios for transitioning from the existing, separate, and uncoordinated recycling programs across the state to a system of comprehensive, harmonized recycling programs that are fully funded, with requirements to recover recyclable PPP and use the recycled materials in new products and packaging. This is a circular economy model that will ultimately allow for tracking of environmental performance, including the tracking of environmental impacts, such as greenhouse gas emissions.

Responsible Recycling Task Force Vision and Principles

The RRTF's vision is to have a funded, robust, and harmonized residential recycling system that produces recyclable materials that are clean and suitable for remanufacture and do not contribute to environmental pollution or endanger human health and safety. In its Recommendations Report, the RRTF stated:

> "*Responsible Recycling is a philosophy that ensures we take responsibility for the waste and recyclables we generate so that they are sorted, processed, and if necessary, disposed in a responsible manner. It ensures that our recycled materials do not cause harm here or elsewhere, including other countries. It also motivates producers and consumers to reduce wasteful packaging and products and increase the use of recycled and recyclable materials. Responsible Recycling is not going to be easy. It is not going to be free. It will require significant changes in our recycling systems and infrastructure. However, it is the right thing to do to conserve valuable resources, minimize impacts from global warming, and secure a sustainable future*."

The RRTF Recommendations Report outlined the following principles which served as the basis for the development of the statewide EPR policy framework and implementation model presented in this study.

- **Quality vs. Quantity** – Collect one "basket" of recyclable materials across the state. Prioritize the collection of materials in the residential recycling system that have value, documented markets, and can be sorted effectively at the MRF. Recyclable materials that are not able to be collected in a residential recycling program and/or sorted effectively when mixed with other materials should be collected through other mechanisms such as depots or retail collection sites. Existing infrastructure should be used where it exists, and new infrastructure should be developed where it is lacking or where it benefits the statewide recycling system in terms of efficiency and deployment of new technology.

- **Regional Policy Alignment** – Recycling systems benefit from regional coordination and policy alignment around the collection and sorting of materials. Such alignment will optimize sorting and processing, reduce contamination, and lead to maximized marketability of materials. To maximize benefits, the system should be harmonized and equitable across the state.

- **Harmonized Messaging** – Collection of one "basket" of recyclable materials would enable the use of consistent messaging across the state to reduce confusion by the public around the priority materials that should be recycled and the key materials that should not be recycled in the residential recycling system, which will ultimately reduce contamination.

- **Domestic Sorting and Processing** – Prioritize domestic (in the United States or Canada) sorting and processing of recycled materials. If no domestic sorting or processing services exist, require that materials be sent to countries with documented health, safety, and environmental standards that are comparable to those in the U.S. and Canada. Benefits of domestic sorting and processing include:
    - Guarantee of appropriate worker health, safety, and environmental standards.
    - Control over the chain of custody and documentation of real recycling.
    - Benefits to the local economy, including job growth and industry resiliency.

- **Create Demand for Recycled Feedstock** – Create demand for products made with recycled materials in order to strengthen markets for recyclable materials. Legislation can require that certain products and/or packaging contain a percentage of recycled feedstock or other means to create demand for recycled commodities and ensure that collected materials are recycled, supporting a "circular economy."

- **Additional Investment** – The full environmental benefits of recycling are not achieved until new products are made with recycled feedstocks. The management of waste, including recycling, has

always had a cost. Replacing virgin feedstocks in manufacturing with recycled materials will require additional investments and funding to support effective collection, processing, and remanufacture.

- **Measure Real Recycling** – Recycling should be measured by tracking the amount of recycled materials that are actually used as feedstock to make new products rather than measuring the amount of materials that are collected in a recycling container. This will discourage the practice of accepting materials into the recycling program to get credit for recycling them, even if there are no viable end markets for these materials and they end up being disposed.

Study Methodology

To develop a policy framework and conceptual implementation model, a consultant team was hired to analyze the existing recycling regulatory and infrastructure system and conceptualize how an EPR system might be overlaid upon it.

The team conducted a comprehensive review of Washington State's current regulations around recycling goals and service requirements, the authority of counties regarding residential recycling service, and local and state governments' roles related to recycling collection. This research included counsel from attorneys from the firm Foster Garvey with expertise in solid waste law on the parameters of existing laws and regulations, and the legal and regulatory feasibility of implementation of an EPR system for PPP in Washington State. The team met with staff from the Washington Utilities and Transportation Commission (WUTC) to confirm details and discuss regulatory parameters of the existing regulations.

The team mapped and documented existing recycling collection and sorting infrastructure across the state to understand the context, potential gaps, and opportunities within the existing system.

The team reviewed policy approaches from other governments across Canada and Europe to learn about successful EPR program design and implementation. The EPR system in place for PPP in British Columbia, primarily operated by Recycle BC, was a key source of information and guidance for the Washington State model. The BC system is particularly informative because BC's geographic, demographic, and recycling infrastructure conditions (prior to their transition to an EPR system) were relatively similar to Washington State's.

BC's approach to EPR is also widely recognized as a model for other governments, including other Canadian provinces, and was recently ranked highest among ten recycling system policy frameworks compared across a multi-criteria analysis commissioned by the Oregon Recycling Steering Committee convened by the Oregon Department of Environmental Quality (DEQ).[1] The consultant team for this project met with administrators and regulators of the Recycle BC program to learn about its underlying regulatory framework, development and implementation process, and ongoing operations and program improvements. Based on this research, the team created an EPR policy framework for Washington State aligned with the RRTF's Responsible Recycling System Framework (see Part 1) and developed a conceptual model for how the EPR policy could be implemented in Washington State (see Part 2).

[1] RRS, Oregon DEQ Recycling System Frameworks Research: Evaluation of Existing Frameworks, Presented to Oregon Recycling Steering Committee and Legal & Relational Subcommittee, December 3, 2019. https://www.oregon.gov/deq/recycling/Documents/recframeworkssumpres120319.pdf.

Chapter 1. Extended Producer Responsibility Policy Framework

1.1 What is Extended Producer Responsibility?

According to the Product Stewardship Institute (PSI), product stewardship is the act of minimizing the health, safety, environmental, and social impacts of products and packaging throughout all lifecycle stages, while also maximizing economic benefits. Extended producer responsibility (EPR) is a legislated type of product stewardship that requires product manufacturers/brand owners to take responsibility for reducing the environmental and financial impacts of their products and packaging across the entire product management lifecycle, including material recycling and end-of-life management. There are two important features of EPR policy:

1) Shifting financial and management responsibility – with government 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.

The EPR systems for packaging and paper products (PPP) that are in place in Europe and Canada today build on the successes and lessons learned from other existing waste diversion programs and from past iterations of EPR for PPP and other types of products. Well-designed EPR systems also promote the transparency and accountability needed to realize the RRTF's vision for a Responsible Recycling System. There is strong evidence from existing EPR systems that this approach can, if appropriately designed for Washington State, achieve the RRTF's goal of a funded, robust, and harmonized residential recycling system that maximizes the recovery and responsible recycling of PPP and increases use of recycled materials in new products.

EPR for PPP is already delivering successful recycling outcomes in places where it has been implemented. According to a report from the Smart Prosperity Institute, "to date, EPR has been most effectively applied in British Columbia…. The Recycle BC PPP program has induced $20 million in capital investments in the recycling of PPP (a significant portion of which is plastic recycling related), expanded the types of plastics collected, and lowered contamination of collected materials, while concurrently insulating both producers and BC municipalities from commodity risks posed by the closure of Asian secondary plastics markets."[2]

1.2 The Changing Landscape of Recycling in Washington State

There are several reasons adopting an EPR policy for PPP would benefit Washington State:

- **There is a need to reverse the downward trend of recycling in Washington State –** Despite repeated commitments by the state and local governments to increase recycling, recycling rates in Washington State have stalled. In 2010, the Washington State Legislature passed a law relating to optimizing the collection of residential recyclables within the current regulatory structure. In the law, the legislature stated:

[2] Smart Prosperity Institute, February 2019, *A Vision for a Circular Economy for Plastics in Canada,* pg. 20, https://institute.smartprosperity.ca/sites/default/files/report-circulareconomy-february14-final.pdf.

> *"It is therefore the intent of the legislature that Washington strive[s] to significantly increase current residential recycling rates by 2020." [2010 c 154 § 1.]*

However, data published by the Department of Ecology suggests that, since then, both per capita recycling and the overall residential recycling rate of the state have declined rather than increased.[3] In contrast, residential recycling of PPP in BC under an EPR system has seen steady improvement since EPR implementation in 2014, and is aiming even higher moving forward.[4]

At the same time, contamination in the recycling stream is increasing, degrading the value and recyclability of other materials. The packaging mix is rapidly changing, with new types of (often non-recyclable) packaging entering people's homes in ever greater quantities. Residents are confused about what to recycle and how to recycle right. A comprehensive, harmonized list of materials collected statewide and best-in-class communications and consumer education programs would help to dramatically improve the performance of our state's recycling system.

- **Local governments lack the resources and influence needed to fix the problems in the recycling system –** Asian markets for Washington State recyclables have effectively closed and competition for reliable domestic end markets is intense. Contamination rates are up and difficult-to-recycle materials are added to the system regularly. These forces are beyond the control of any local government.

  Multiple residential recycling programs in Washington State have stopped accepting certain types of plastics, mixed paper, glass, and other materials due to the lack of markets and high costs of recycling to local governments and residents. Many residents in Washington still live in areas where recycling is unavailable, inconvenient, or expensive but—given the increasing costs of providing recycling service—it is unlikely that local governments in Washington will be extending affordable, convenient recycling service to these communities in the near future. In contrast, many rural and otherwise underserved communities in BC received access to recycling service for the first time, and now nearly all residents (98.3%) have access under the Recycle BC system. The residential recycling program provided under EPR collects an expansive list of materials provincewide and reduces the cost burden of recycling on local governments and residents.

- **There is increasing regional, national, and international momentum for EPR as a solution to recycling issues** – EPR for PPP already exists or is under development in most European countries and several Canadian provinces and is being rapidly adopted by nations around the globe. There is mounting evidence that well-designed and enforced EPR policies for PPP increase recycling rates, provide financial stability and support for recycling systems, and engage producers in addressing pressing challenges facing recycling systems such as products not being designed to be recyclable, increasing contamination, and lack of market development. By 2024, all EU member states will be required to have packaging EPR in place; Canadian provinces are on a similar trajectory. China and India are expected to implement EPR systems for packaging in 2022; South Africa, Brazil, Chile, and Columbia have EPR systems for packaging in development, and more are being considered.

  - In the U.S., the Maine Department of Environmental Protection submitted draft EPR legislation for PPP to their state legislature in December 2019, the New York state

[3] Washington State Department of Ecology, *Waste generation and recovery data (2017)*, downloaded in November 2019 from https://ecology.wa.gov/Research-Data/Data-resources/Solid-waste-recycling-data.
[4] Recycle BC, Packaging and Paper Product Extended Producer Responsibility Plan, June 2019, http://recyclebc.ca/wp-content/uploads/2019/07/RecycleBCStewardshipPlan_16July2019.pdf.

legislature took up consideration of two EPR for PPP bills in February 2020, and several other states—including Oregon, California, Vermont, Massachusetts, and Indiana—are actively studying EPR policy options for PPP in their states. At the federal level, Senator Udall (D-NM) and Representative Lowenthal (D-CA) introduced legislation to implement EPR for PPP nationally in February 2020.[5]

- Since many PPP producers do business in multiple markets, Washington State residents are likely already contributing to producers' financing of EPR systems in other countries where they exist.

- **The recycling system in Washington State needs new investment and innovation –** Washington State's recycling system is largely shaped by highly decentralized decision-making on the part of local governments, making coordinated planning and large-scale investments challenging, especially in this era of a rapidly changing packaging mix and increasing contamination. The state's recycling infrastructure is insufficient and needs investment and rapid deployment of technologies and equipment to meet more stringent quality standards demanded by end markets. In other parts of the world (across much of Canada and Europe), PPP producers have either assumed primary responsibility or shared in responsibility for the residential recycling system. Their coordinated efforts—catalyzed and required by EPR policies—have resulted in major investments in new technologies and new end markets that are stimulating new waste diversion, reducing greenhouse gas emissions, and creating local "green" jobs.

- **Consumer product companies have already set voluntary circular economy goals** – Many major brand owners have made public announcement around adoption of circular economy goals including for increased recycling and increased recycled content in packaging, independently or as part of the Ellen MacArthur Foundation's New Plastics Economy Global Commitment. The goals set by these companies will be difficult to meet without coordinated action and government support. In the absence of an EPR policy, the costs of the investments necessary and the responsibility for coordination will fall largely to the state and local governments and circular economy achievements will likely fall short of corporate goals.

1.3 EPR Policy Framework

The establishment of a comprehensive, statewide producer-funded EPR system for residential packaging and paper products (PPP) in Washington State will require the passage of new state legislation. This section outlines the nine main elements of a **policy framework** for state legislation that draws on best practices and policy design principles from existing EPR policies elsewhere while aligning with the RRTF vision and principles for a Responsible Recycling System.

These policy elements—along with assumptions about how the details would be defined and applied under the model EPR system—are described in detail below. The following section (1.3) describes the expected outcomes and benefits of this EPR policy approach for various stakeholders and for a statewide system of responsible recycling. The final section in this chapter (1.4) addresses relevant policy issues not covered as part of this framework that will need to be addressed in the future.

[5] Waste Dive, "Break Free From Plastic Pollution Act debuts in Congress, instigating packaging EPR debate", February 11, 2020, https://www.wastedive.com/news/udall-lowenthal-break-free-from-plastic-pollution-recycling-epr/571985/.

A conceptual model for how an EPR system could be implemented in Washington State following adoption of this policy framework is presented in the following chapters (Chapters 2-8) of this study.

This EPR policy framework and conceptual model addresses the **full lifecycle of PPP.** It establishes the conditions for development of a reverse **supply** chain for residential PPP materials and simultaneously creates a mechanism for driving **demand** for recycled feedstock to be used in the production of products and packaging. This approach will catalyze a shift toward a more circular economy for PPP.[6]

1) Assign responsibility to producers of packaging and paper products (PPP) for the collection, transportation, sorting, and recycling of these materials from residential sources.

Producers of packaging and paper products (PPP) would be operationally and financially responsible for the collection, transportation, sorting, and recycling of these materials from residential sources through development of a reverse supply chain. Producers would fund all administrative and operational costs associated with activities undertaken to achieve the requirements and standards defined in the policy.

Producers of PPP would be responsible for achieving the collection service and performance standards established as part of the policy framework (described in Elements 3-6) in accordance with Washington State's waste management hierarchy (prioritizing reduction, reuse, and recycling over disposal).

OECD EPR Policy Guidance for Efficient Waste Management

A recent review of EPR policies conducted by the Organization for Economic Co-operation and Development (OECD) concludes these elements are critical to well-functioning EPR systems:

- Design requirements and governance elements are crucial to the performance of EPR systems.
- Policy framework clearly defines the materials and producers covered.
- Robust performance standards and reporting requirements art set.
- A mechanism for effective enforcement is established.

The policy would clearly define "producers" and establish a definition and/or provide a specific list of PPP materials whose producers are to be covered by the requirements. The list or definition would include all material that meets the definition of residential "packaging and paper products (PPP)." The definition would include materials that are currently considered recyclable as well as PPP materials that are not considered recyclable (for example, flexible pouches).

Inclusion of all PPP in the policy would ensure that all PPP producers are obligated to contribute financially, not only those producers who generate PPP materials deemed "recyclable" at the time of drafting. The definition of PPP would be flexible enough to allow for subsequent inclusion of materials that may not exist at the time of drafting, so that as new products and new PPP categories enter the market, it is clear whether they are covered by the policy or not.

All producers of PPP as defined in the policy would be obligated to demonstrate compliance with the policy requirements. The policy could include a streamlined fee and reporting structure or exemption for small producers ("de minimis") according to criteria stated in the policy.

[6] Smart Prosperity Institute, *A Vision for a Circular Economy for Plastics in Canada*, February 2019, p.17.

2) **Authorize producers to form a producer responsibility organization (PRO) to manage the responsibilities established in policy using eco-modulated fees to drive changes in packaging design**.

   Producers would be allowed and are expected to jointly establish a non-profit producer responsibility organization (PRO). The PRO would determine the fees owed by producers using an eco-modulated fee structure to encourage and reward the design of easily recyclable packaging and use of recycled content (or other design attributes), and to discourage or penalize the use of packaging that is disruptive to recycling systems. The PRO would use this fee structure to collect fees from member producers and pay for the PPP recycling system using these revenues. As with all non-profit organizations, a PRO would be governed by a board of directors, representing member producers. The EPR policy would also require that a PRO also be guided by an advisory board representing a range of stakeholders involved in residential recycling service and to provide transparency through public advisory meetings and publicly available meeting minutes.

3) **Establish a uniform list of recyclable materials that must be collected from residents statewide.**

   The policy would establish a uniform list of recyclable PPP materials that must be covered by collection programs for all residents statewide. This would ensure that all residents statewide have access to recycling collection for the same materials. The list would be comprehensive, including all PPP materials currently accepted in at least some residential recycling programs in the state that have been demonstrated to be feasibly recycled.

Minimizing Impacts of EPR Policy on Small Businesses

To minimize the administrative burden of EPR policy on small businesses, some jurisdictions adopt exemptions or provide streamlined registration and fee structures for small businesses. Example policies include:

In **British Columbia**, two types of policies are in place to assist small businesses with EPR policy compliance:

- **De minimis exemption:** Small businesses that 1) have revenue of less than $1 million, 2) supply less than one tonne of PPP to the BC market annually, 3) operate a single point of retail (not including franchises), or 4) are non-profit organizations do not need to register as producers and are exempt from the regulation.
- **Flat fees for low volume producers:** Businesses that distribute 1-15 tonnes must register as producers but are eligible for flat fee payments and reduced reporting requirements.

In **Manitoba**, all producers must register with the PRO regardless of their size, but small businesses with annual gross revenues from the sale of all products and services in Manitoba of less than $750,000 are exempt from filing annual Steward's Reports and paying fees.

Although the policy would establish a uniform list of materials that must be collected, producers would be given flexibility to collect these materials using different arrangements depending on local context. This would allow utilization of the existing infrastructure and assets and minimize disruption to residents. Materials that are determined to be problematic in curbside collection programs, in certain areas or statewide, could be collected through drop-off collection infrastructure as needed to meet the collection and recycling requirements established in the policy. The policy would also describe the process and criteria for how a PPP material not initially included on the list of collected materials could

be added later or how and under what circumstances a material could be removed from the list for collection.

The list of materials included in the PPP EPR program in British Columbia is included in Appendix A.

4) Establish statewide minimum collection service standards for residential recyclables.

The policy would establish statewide minimum collection service requirements to ensure that all residents throughout Washington State receive convenient, equitable recycling service. Expansion of service to meet the requirements would be phased in over a set number of years, as the additional collection and sorting infrastructure is built.

These statewide requirements would replace all County-level standards for residential recycling collection adopted by County Authorities in their solid waste management plans. This would reduce the administrative burden on local governments around planning, oversight, and reporting around residential recycling of PPP, potentially eliminating or streamlining requirements related to residential recycling programs in their solid waste management plans.

See Chapter 4, Recycling Collection, for example statewide collection service requirements.

5) Establish material-specific minimum net recycling rate requirements for covered PPP and associated timelines for achieving them.

Producers would be responsible for achieving the net recycling rates established in policy. The requirements would be set on a material-specific basis such as for aluminum or rigid plastics. This would drive collection and recycling of all PPP material types, not just those that deliver the greatest tons for an overall weight-based recycling rate calculation.

The initial minimum net recycling rates and timelines would be set in the policy, by material, along with a description of a process for reviewing and updating them in the future as needed.

Calculating Net Recycling Rates, Setting Material-Specific Standards

Under EPR systems, producers are required to report the annual tons of each type of PPP sold into the regulated market. All tons of PPP are included, regardless of whether the material is considered recyclable or not. This amount is the denominator for recycling rate calculations.

Historically, EPR policies have set recycling rate targets for all PPP material types combined and have allowed producers to calculate recycling rates using tons collected as the numerator. This has led to a bias toward collection of heavier materials and uneven attention toward collection of relatively lightweight material types such as rigid and film plastics. Using tons collected to calculate recycling rates has also limited visibility into the presence of contamination and the importance of having viable end markets for collected materials.

To address these issues, EPR policies are shifting to requiring the use of net recycling rate calculations and setting recycling rate standards on a material-specific basis. To calculate net recycling rates by material type, producers must use net tons of a given material type after sorting (and therefore not including the weight of contaminants) that were delivered to verifiable reprocessors or end users as the numerator.

Both British Columbia and the European Union have already adopted material-specific net recycling targets, and Ontario is in the process of doing so. See Chapter 6, Recycling Rate Standards, for example standards and additional details.

6) **Establish material-specific minimum post-consumer recycled content requirements for PPP materials covered under the legislation.**

   The policy would include minimum recycled content requirements that producers of PPP would be required to meet. Producers' compliance with these requirements could be achieved in a number of ways such as by PPP material category, across the producer's entire product line sold in Washington State or across the entire portfolio of products produced by the PRO's members. This would provide producers flexibility in how they meet the recycled content requirements. It would also enable the PRO to use modulated fees, a credit-trading scheme, or other mechanism jointly agreed upon and implemented by producers to achieve the minimum recycled content required in policy.

7) **Require verifiable documentation and transparent reporting to demonstrate that PPP materials collected are responsibly recycled.**

   Gaining greater transparency and confidence that the collected materials have been recycled in manner that is protective of the human health and the environment is a major benefit of well-designed EPR systems. To achieve this outcome, the policy would require producers to report annually on their compliance with recycling rates, including verifiable information that marketable commodities produced through their program activities were delivered to facilities with controls for appropriate protection of human health and the environment that is equivalent or greater than Washington State laws.

   In order to be counted as "recycled" in the net recycling rate calculation, producers would be required to include verifiable information about the receipt of materials by reprocessors or end

Circular Economy for Packaging Requires Both Supply and Demand Solutions

Experts on policy design in support of circular economy principles and critics of EPR systems to-date have identified that, on its own, a supply-side approach to EPR does not ensure that the benefits of recycling will be adequately realized through the creation of stable and sufficient markets for recycled feedstocks.[7,8] To complement the supply-side approach of existing EPR programs, a policy element that requires producers to meet minimum recycled content standards for PPP materials covered under the policy would add an important demand-side component.[9]

Recycled content mandates are already in place for certain materials in California and Oregon, adopted for PET bottles in the EU, and have been adopted more broadly on a voluntary basis by packaged goods companies and retailers that are signatories to the Ellen MacArthur Foundation New Plastics Economy Global Commitment.

To date, most recycled content mandates have been adopted or proposed for plastics, but they could be applied more broadly to all materials covered under the policy as part of an effort to facilitate more holistic product stewardship and circular economy behavior by producers of PPP.

See Chapter 7, Recycled Content Requirements, for example standards and additional details.

[7] Smart Prosperity Institute, *A Vision for a Circular Economy for Plastics in Canada*, February 2019, p.22.
[8] Clarissa Morawski, "In My Opinion: It's Time for Recycled Content Mandates." *Resource Recycling,* November 28, 2017. https://resource-recycling.com/recycling/2017/11/28/opinion-time-recycled-content-mandates/.
[9] "Post-consumer recycled content" means material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain. (ISO 14021:2016 Section 7.8.1.1)

users. Disposal of residuals from sorting activities under the EPR system would be expected to adhere to the same requirements as other solid waste generated in Washington State.

8) Require producers to develop stewardship plans through public consultation and to report annually on EPR system activities and performance.

Producers, individually or through the PRO they are a member of, would be required to develop a stewardship plan using a mandatory stakeholder consultation process following state adoption of the policy. The minimum requirements of the consultation process would be described in the policy and producers would be required to report on the process and the feedback received from stakeholders through the process as part of the stewardship plan. A minimum of 1-2 years would be provided for the consultation and plan development process.

The stewardship plan produced would be expected to describe the intended approach and activities to be undertaken to fulfill producers' obligations and to achieve the mandated performance requirements. The plan would require approval from the designated regulatory authority prior to implementation. Producers would not be considered in compliance with the policy until they are operating under an approved plan. Producers would be required to repeat the consultation and stewardship plan development process every five years.

In addition to these forward-looking plans, producers individually or through the PRO, would be required to submit annual reports to the designated regulatory authority on all activities undertaken, performance metrics, associated costs and other reporting elements deemed necessary for compliance monitoring.

Increasing Transparency and Oversight of Recycling End Markets

In British Columbia, the EPR policy requires that producers provide third-party assurance on the program performance data required to be reported. This includes providing documentation of reasonable assurance that all tons of materials claimed as "recycled" were delivered to a viable reprocessor or end user.

The BC Ministry of Environment & Climate Change Strategy (MOE) has the authority to define "viable" based on certain standards and does so through its own annual audits of assurance reporting. Although stakeholders in BC initially raised concerns about the quality of oversight of producers' claims, a review conducted by the Auditor General of BC found that the BC MOE was addressing these concerns and continuing to improve its approach to monitoring and verifying assurance reports to ensure that claims of responsible recycling are valid.[10]

To meet its reporting obligations, Recycle BC PRO contracts with a third-party auditor to validate non-financial claims related to performance. On a voluntary basis, Recycle BC chooses to include transparency and verification obligations on the part of its post-collection contractors and requires that all subcontractors and reprocessors/end users receiving material be pre-approved by Recycle BC directly.

See Chapter 5, Post-Collection Sorting and Marketing, for additional details about material marketing and verification of responsible recycling under EPR.

[10] Auditor General of British Columbia, *Product Stewardship: An overview of recycling in BC*, November 2016, https://www.bcauditor.com/sites/default/files/publications/reports/FINAL_Product_Stewardship.pdf.

9) Establish a regulatory authority, funded by registration fees paid by producers, to monitor compliance and robust mechanisms for enforcement of policy requirements.

The effectiveness of all other elements of the EPR policy depends on meaningful enforcement, and delivering robust enforcement requires clear authority and dedicated resources to exercise that authority. To ensure effective enforcement of the law, the policy would establish a regulatory authority—in the form of an agency, commission, or not-for-profit corporation—authorized to carry out duties associated with compliance monitoring and enforcement of the new policy.

This regulatory authority would be separate from the PRO, have regulatory authority over producers, and be funded through registration fees paid by producers as part of their compliance requirements. The policy would lay out the parameters to ensure the independence of staff and/or board representatives of the agency to prevent the potential for representation by individuals with conflicts of interest through involvement with the regulated industry.

Stakeholder Consultations in British Columbia

Under the EPR policy in BC, the PRO (Recycle BC) was required to host a stakeholder consultation within five years of the launch of the original program plan to inform the development of the second 5-year plan. The consultation process, which began in November 2017 and concluded in October 2018, included five consultation points, most consisting of multiple events or presentations.

In total, 18 consultation presentations or sessions were delivered—in person, by webinar, or, in most instances, both—and included participants from local governments, private collection service providers, sorting facilities, educators, community champions, and others. Participants were given opportunities to provide feedback through a pre-consultation survey, through activities during consultation sessions, and in writing during written feedback periods.

Feedback received was taken into consideration for the development of its new stewardship plan and new collector agreements and incentive packages. Recycle BC produced a consultation report summarizing feedback received through its consultation process, included in its updated stewardship plan, which was approved by the BC Ministry of Environment & Climate Change Strategy in June 2019.

The Authority would be responsible for the following compliance monitoring and enforcement activities:

- Maintaining a registry of producers obligated under the policy and ensuring their participation in a producer responsibility program (individually or through a PRO).
- Oversight of stewardship plan development, including the mandatory public consultation process, and approval of the stewardship plan prior to implementation.
- Evaluating producers' compliance with policy requirements through review of annual reports submitted by producers.
- Levying fines on "free rider" producers for failure to register or failure to pay dues to PRO.
- Levying fines on producers, individually or through their representative PRO, for failure to operate under an approved stewardship plan or for failure to achieve the performance requirements established in the policy.

A New Frontier in Regulatory Oversight of EPR Systems in Ontario

Ontario, the province with the longest history of both curbside recycling and EPR for PPP in North America, recently overhauled its regulatory approach to improve oversight, verify environmental outcomes and better foster cost efficiency and innovation in the transition to a circular economy while providing a seamless transition for residents.

The Resource Productivity and Recovery Authority (RPRA) was created in November 2016 by the Government of Ontario through the Resource Recovery and Circular Economy Act, 2016 (RRCEA) as the regulatory entity responsible for oversight and enforcement of the legal requirements of Ontario's EPR policies.

One of RPRA's primary responsibilities is to maintain a registry of producers obligated under the EPR polices. The agency's compliance monitoring and enforcement work is funded by the mandatory registration fees paid by producers as part of their compliance requirements. The Authority is made up of a board appointed based on skills-based parameters and explicitly excludes all industry-associated professionals due to conflicts of interest.

The transition to outcome-based regulation in Ontario that is being overseen by RPRA is ongoing and how this approach will be applied to residential recycling collection is not yet known (so far, only the EPR program for tires has fully transitioned to the new regulatory framework) but the RPRA approach to regulation is viewed by EPR policy experts as a potentially important evolution in the efficacy and rigor of enforcement of EPR policies for PPP.

See Chapter 8, Compliance Monitoring and Enforcement, for additional details about compliance monitoring and enforcement.

Additional Issues to Address in Policy

In addition to the nine central policy elements presented above, the policy would address several additional issues that can pose challenges in the transition to an EPR system if not clarified from the start:

- **Recycling collection in WUTC-regulated areas:** The policy would need to clarify whether residential recycling collected under the EPR system would be exempted from WUTC regulation or not. Current state law requires that residential recycling in Washington State be collected by the designated G-certificate collection service provider except for when collected by a city or by a private collection service provider operating under contract with a city or county (RCW 81.77.130). The EPR policy could either extend the exemption to exclude residential recycling collection provided under an EPR system from WUTC regulation or simply require that producers pay for residential collection under the existing WUTC regulatory framework.
- **Sufficient timeframe for transition to allow for stakeholder consultation and plan development:** Providing for a smooth transition from the existing system to the EPR system will require a phased approach over multiple years. The policy would need to establish a timeline for the transition and implementation, providing a minimum timeframe of 1-2 years for stakeholder consultation and stewardship plan development, and another 2-3 years following plan approval before requiring the formal implementation of the producer-funded EPR system. This timeframe is necessary to ensure that the EPR system is designed with sufficient stakeholder input and to allow for the capital

investments, commercial relationship development, and contract renegotiations that will be required to prepare for and adapt to the EPR system.

- **Shared understanding of producers' responsibility for covering service costs:** The intent of the policy is to make producers operationally and financially responsible for managing a reverse supply chain for PPP and for achieving the performance requirements set in the policy. This is not the same as a guarantee of full cost recovery for cities that choose to act as residential recycling collectors, without consideration of potential efficiencies or for activities related to residential recycling that fall outside of the requirements of the policy. To support shared understanding across stakeholders, the policy would use consistent definitions and provide stakeholders with clear interpretations of which aspects of residential recycling are and are not covered. There would also need to be clarity in the policy about what the process would be to expand producers' responsibilities to cover additional aspects of PPP management (e.g., PPP in the commercial sector, litter and public space collection, etc.) in the future.

1.4 Expected Outcomes of an EPR Policy Approach

The adoption of the comprehensive, statewide EPR policy framework described above and the transition to a producer-funded EPR system for residential PPP would take many years. Experiences from similar system transitions in Canada and Europe indicate that planning for a 5-to-10-year timeframe for full implementation is appropriate. It is a system that allows for continuous improvement and adaptation changes in the market.

Once fully implemented, the EPR system implemented to meet the requirements laid out in the policy framework could be expected to deliver significant benefits aligned with the goals of the Responsible Recycling Task Force (listed in the Introduction) and in support of the development of a circular economy for packaging and paper products.

The following table summarizes how the elements of the policy approach are designed to support the Responsible Recycling System Framework developed by the RRTF and the anticipated benefits that would result from implementation of the policy approach.

Table 1. Responsible Recycling System Framework Outcomes Anticipated from Policy Implementation

Responsible Recycling System Framework	Supportive Policy Elements(s)	Anticipated Outcomes/Benefits of Policy Implementation
Quality vs. Quantity	#3: Consistent statewide requirements for convenient collection. #4: Harmonized list of materials collected statewide. #5: Producers required to achieve material-specific recycling rates.	• Results in reduced contamination while increasing material recycling (*quality and quantity*). • Producers fund additional infrastructure where needed. • Creates feedback loop to improve recyclability of packaging.
Regional Policy Alignment	#3: Consistent statewide requirements for convenient collection. #4: Harmonized list of materials collected statewide.	• Access to recycling is more equitable for state residents. • More materials are collected for recycling.

Harmonized Messaging	#1: Producers fund collection/ sorting/marketing of PPP. #4: Harmonized list of materials collected statewide.	• Producers fund consistent, robust, and effective education designed to reach ALL state residents. • Unified message reduces confusion, lowers contamination.
Domestic Sorting and Processing	#5: Producers required to achieve material-specific recycling rates. #6: Materials must be responsibly recycled, with end market documentation.	• More recyclable materials are collected, and new technologies are used to sort and recycle more. • Collected materials are recycled in ways that protect human health and the environment.
Demand for Recycled Feedstock	#7: Producers required to use recycled content in their packaging/products	• Producer demand for recycled content supports investment in local jobs, new businesses, growth of circular economy.
Responsible Recycling Requires Additional Investment	#1: Producers fund collection/ sorting/marketing of PPP. #2: Producers authorized to form PRO(s) to manage responsibilities.	• Producers provide sustainable financing for recycling system. • Producers bear risks associated with fluctuating market prices, shrinking value of "evolving ton."
Measure Real Recycling	#5: Producers required to achieve material-specific recycling rates. #6: Materials must be responsibly recycled, with end market documentation. #8: Mechanism in place for effective oversight and enforcement.	• Burden of proof is on producers to track materials, verify recycling, before making recycling claims. • Residents have assurance that collected materials are responsibly recycled. • Producers meet their obligations or are fined for non-compliance.

Residential Recycling in British Columbia Before and After EPR System Implementation

Data from successful EPR policies and programs provide great promise for possibility of achieving the RRTF's goals for a responsible recycling system through implementation of a producer-funded stewardship system. As one example, the following table provides a comparison of key outcomes of the residential recycling system in British Columbia before and after implementation of the EPR system for PPP in 2014.

BEFORE (2013 Current System Report)	AFTER (2018 Recycle BC Annual Report)
• 1,346,022 residential households received curbside/onsite collection service	• 1,465,000 residential households received curbside/onsite collection service (9% increase) • 98.3% of households have access to recycling.
• 50-57% recovery rate for PPP.	• 78.1% recovery rate for PPP (tons collected). • 87% of material collected is recycled.

• Separate and uncoordinated recycling programs, facilities, and MRFs.	• Harmonized collection/post-collection. • Economies of scale. • Investments in local infrastructure. • New materials added to collection system, additional commodities marketed. • No materials dropped from program, although collection of some materials problematic in curbside collection was shifted to drop-off. • No changes to service due to volatile commodity markets.
• Most recyclable paper and plastic materials were exported in mixed bales.	• Plastics sorted by resin type at central Container Recovery Facility (CRF). • 99% of plastic is recycled in North America. • All materials claimed as recycled have verifiable documentation that receiving reprocessor/end user complies with OECD standards for protection of human health and the environment.

1.5 Future Considerations

There are several relevant issues not included in this framework, but that merit further research and will need to be addressed in the future. They include the following:

- **PPP in the industrial, commercial, and institutional (ICI) sector** represents a large material stream with many of the same issues as the residential sector. PPP in ICI streams is included in some European EPR systems (although predominantly as a reporting and tracking function only) and is being considered for inclusion in the BC system. However, because the policies and frameworks for implementing EPR for PPP in the ICI sector is less developed, and because the regulatory authority of the state and local governments over recyclable materials in the commercial sector in Washington State is more limited, inclusion of the ICI sector in an EPR system for PPP will require additional study, beginning with data gathering on PPP generated and recycled in ICI streams.
- **Public space waste and litter** are also not yet effectively addressed in other EPR systems, and there is no research on existing best practices for how to implement EPR for this at scale. The European Union Circular Economy Packaging Directive (March 2019) not only requires producers to establish EPR programs for products like food and beverage containers, take out cups, plastics carrier bags, etc., but also to cover the costs of collecting, transporting, and treating these materials and including the costs of litter cleanup (by 2029). Future research into EPR policy and program developments on public space waste and litter is warranted.
- **PPP managed through the organics system** is not currently addressed in EPR systems that focus on tracking and cost coverage for recycling only. In BC, Recycle BC is studying the amount of PPP being collected and managed in organic waste collection programs and the role that organic waste collection could have long-term in the overall post-collection management of PPP in British Columbia. Depending on the results of the research, Recycle BC may develop a financing mechanism to cover the costs of managing appropriate types of PPP (e.g. soiled paper compostable bio-plastics) in the organics stream.
- The RRTF's Action Item 1E for 2020 is to develop a feasible model for **beverage container stewardship** in Washington State similar to the Oregon Beverage Recycling Cooperative model.

Container deposit schemes can be part of larger EPR systems, as is done in BC and many European countries. Further research on this topic will be conducted in 2020.

- **The impacts of EPR systems for PPP on waste prevention** are not yet well documented, as many of the policies designed to address the environmental impacts of PPP beyond basic recycling rate mandates are new and early in implementation or still in development. As new EPR system elements such as material-specific recycling rate requirements, eco-modulated fee structures, and GHG emissions reporting mature, it will be possible to evaluate and document the extent to which EPR systems drive waste prevention and reduce the overall environmental impacts of PPP beyond end-of-life management considerations.

Chapter 2. Roles and Responsibilities

Under an EPR system implemented based on the policy framework laid out in Chapter 1, EPR Policy Framework, the roles and responsibilities of many stakeholders involved in residential recycling in Washington State would shift. The following table summarizes a conceptual model for the roles of the new entities that would be established to direct and oversee producers' responsibilities, as well as the roles of entities currently involved in residential recycling and how they might change. Subsequent chapters provide additional details on the conceptual model for implementation of the EPR policy approach described above.

New Stakeholders	Roles and Responsibilities Under Model EPR System
Producers	▪ **Financially and operationally responsible for PPP recycling in accordance with state requirements.** Under the model EPR system, producers would become financially and operationally responsible for establishing a reverse supply chain for the collection, transportation, and end-of-life management of residential PPP in accordance with the minimum service and performance requirements established. ▪ **Responsible for coordinating statewide resident education to support awareness and participation.** Because producers would be responsible for achieving the material-specific recycling rates established in the policy, they would fund and oversee education and outreach to residents to ensure sufficient awareness and participation of residents in the recycling programs provided. ▪ **Obligated to make investments and design changes to achieve mandated levels of PPP recycling and recycled content.** In order to reach and maintain the material-specific recycling rates, producers would also need to improve the recyclability of their packaging through design changes as well as through research, development, and investment in new systems and technologies for recovering PPP materials and transforming them into feedstocks for production of new products. ▪ **Motivated to tackle contamination and increase the quantity and quality of recycled materials.** Because, under the model EPR system, producers would bear the full costs of collection and sorting collected materials and would rely on the revenues of marketed commodities to offset these costs, they would be motivated to invest in resident education and outreach strategies that both increase the capture of high-value recyclable materials and reduce the presence of contaminants in collected materials. Because they are also required to achieve minimum post-consumer recycled content requirements for packaging and paper products sold into the state, producers would also be motivated to make investments that increase the supply and improve the quality of marketed recyclable commodities while also reducing sorting costs.
Producer Responsibility Organization	▪ **Formed to coordinate and carry out producers' responsibilities.** Under this conceptual model, as in most other jurisdictions with EPR systems, producers would carry out their responsibilities

through the formation of a producer responsibility organization (PRO) to act on their behalf.[11] The PRO would operate as a 501(c)3 non-profit organization governed by producers, advised by a broad range of stakeholders, and overseen for compliance by an independent regulatory authority.

- **Designates materials to curbside and drop-off collection, ensuring collection service and recycling rate requirements are met.** The PRO would not determine which PPP materials will be collected from residents—the uniform list of recyclable materials to be collected statewide would be established by the state through policy—but would determine which materials to collect curbside/onsite and which to collect through drop-off locations. This determination would be made in consultation with its board(s) of directors, advisory board members, and other stakeholders. Regardless of the approach(es) chosen, the PRO would be responsible for ensuring that the mandated service and performance requirements are met.
- **Designs producers' programs and executes contracts for collection, post-collection services**. The PRO would responsible for designing and implementing all aspects of producers' programs to achieve the requirements established in the policy. This would include entering into contracts to provide for residential recycling collection service with cities and counties that choose to act as contracted collectors, with private collection service providers for collection in areas not covered by city/county contracts, and with post-collection service providers for transportation, consolidation, sorting, and marketing of collected materials. The nature of these arrangements and terms of associated contracts would be subject to negotiations between the PRO and the service providers.
- **Develops overall approach that meet legislated mandates in a fair and cost-effective manner.** Because the PRO would be involved in and responsible for activities and their financial impacts across the PPP reverse supply chain, it would have unparalleled access to information about the costs and benefits of specific elements and individual decisions on the system as a whole. The PRO would be responsible for balancing various members' interests in order to ensure that, collectively, producers meet the legislated mandates for provision of service, material capture, and recycled content in a fair and cost-effective manner.
- **Sets fees for cost recovery from producers. Motivated to design fee structure to drive compliance with state mandates.** The PRO would be responsible for developing the fee structure and for assessing fees on its producer-members to finance its operations and fulfill obligations. Because producers' collective goals would include material-specific recycling rates and minimum recycled content requirements, a PRO could use financial instruments such as eco-modulated fees to penalize producers for the use of packaging that is disruptive to the successful recycling of materials, incentivize producers to make design changes to make PPP more recyclable, as well as compel investment in new systems and technologies for cost-effectively recycling more PPP materials.

[11] In the interest of simplicity, the model EPR system includes a single PRO. However, it is assumed that the decision about whether to form a single PRO or multiple PROs would be left to producers, as it has been in other jurisdictions. Research carried out by the OECD in the EU has found that monopoly and competition systems can work equally well; the key is to have well written regulations, high targets, clear governance systems, and strong enforcement (OECD, *Extended Producer Responsibility: Updated Guidance for Efficient Waste Management*, OECD Publishing, Paris, 2016). Based on legal consultation undertaken as part of this study, it is assumed that the formation of a PRO in response to new state legislation would not be subject to Federal antitrust laws, under the "Parker immunity," which applies when (1) otherwise anticompetitive conduct is "clearly articulated and affirmatively expressed as state policy" and (2) that policy is "actively supervised" by the state itself.

Regulatory Authority	▪ **Oversees producer implementation of mandatory public consultation process during transition period and approves required stewardship plan prior to system transition.** Following adoption of the policy framework, producers would be required to develop a stewardship plan using a mandatory public consultation process as described in the policy framework. Under the conceptual model, this process would be overseen by the newly formed independent regulatory authority dedicated to compliance monitoring and oversight of the EPR system. The stewardship plan, which would describe the intended approach and activities to be undertaken to fulfill producers' obligations and achieve the mandated performance requirements, would require approval from the Authority to proceed and producers would not be considered in compliance with the policy requirements until they are operating under an approved plan. ▪ **Maintains registry of producers, collects annual registration fees, and undertakes monitoring and enforcement activities to ensure compliance with statewide service requirements, net recycling rates, and other performance targets.** Under the model EPR system, the newly formed regulatory authority would be responsible for tracking participation of producers and ensuring compliance with requirements. To monitor compliance, the authority would develop and maintain a registry of producers and require producers to register annually and to pay registration fees, which would be used to fund the authority's monitoring and enforcement activities. In addition to tracking registrations, the authority would monitor ongoing compliance through review of annual reports submitted by producers. The Authority would be authorized to levy fines on "free rider" producers that fail to register or pay dues to the PRO, and to levy fines on producers, individually or through their representative PRO, for failure to achieve the performance requirements established in the policy.

Existing Stakeholders	Roles and Responsibilities under Existing System	Roles and Responsibilities under Model EPR System
State Government	▪ Establishes overall state objectives related to recycling, waste, and materials management. ▪ Assigns responsibility to county and city governments for solid waste management. ▪ Directs county governments to set service requirements for recycling.	▪ Assigns responsibility for establishing a reverse supply chain for residential PPP to producers. ▪ Sets clear, harmonized, and enforceable statewide policy around producer responsibility requirements for residential PPP. ▪ Retains overall authority over policy and enforcement.
County Governments	▪ Responsible for overall planning and oversight of residential recycling services and education in their jurisdictions. ▪ Establish minimum service levels for residential recycling. ▪ Operate drop-off recycling locations. ▪ Can opt to contract for residential recycling service in their jurisdiction.	▪ No longer responsible for standard-setting and planning for recycling of residential PPP, as service requirements are now set statewide. ▪ Continue to operate drop-off collection and receive reimbursement from PRO for service costs or rely on PRO to operate drop-off system in accordance with state requirements. ▪ Retain authority to contract for residential recycling, if desired, and receive reimbursement from PRO for service costs.

City Governments	▪ Can opt to provide residential recycling programs to their residents, either directly or by contracting for service from a private collection service provider. ▪ Act as primary source of education and communication about recycling for residents within their jurisdiction. ▪ Have discretion on how to structure, finance, and deliver residential recycling collection, but often without complete cost information due to embedded/bundled pricing in contracts. ▪ Responsible for upholding waste prevention hierarchy and achieving state and local waste reduction and recycling goals, but often without transparency about material flows or verification of responsible recycling by their service providers. ▪ In some cases, bear risks associated with commodity price fluctuations and diminishing market values of residential PPP due to the structure of their collection/sorting contracts.	▪ Retain authority to act as residential recycling service providers, if desired. Can act as collector for EPR system via contract with PRO and receive reimbursement for service costs, choose to transfer service responsibility entirely to producers, or opt out of producer-funded system. ▪ Continue providing resident education and communication related to residential recycling, if desired, in coordination and with funding provided by producers. ▪ Continue providing other residential services, such as garbage, organics, specialty collections (e.g. bulky waste), waste prevention education, and other services currently provided (including commercial service, if applicable). ▪ No longer responsible for bearing risks associated with fluctuating commodity values for recyclable materials collected.
Private recycling collection service providers under contracts	▪ In most cases, provide residential recycling collection under bundled service contracts with cities/counties in accordance with local requirements. ▪ In most cases, decide where to deliver collected materials for sorting. ▪ In most cases, bear the risks associated with commodity price fluctuations and diminishing market values of residential PPP, because of bundled contracts and embedded recycling service pricing.	▪ At city/county discretion, continue providing residential recycling collection under contracts, in accordance with new statewide requirements. ▪ Able to bid on contracts for service areas managed directly by the PRO, in accordance with new statewide service requirements. ▪ Deliver collected materials to sorting facilities operating under EPR system. ▪ No longer bear risks associated with fluctuating commodity values.
Private recycling collection service providers under WUTC regulation	▪ Provide residential recycling collection in accordance with county solid waste management plan requirements to residents in all areas of the state not served by Cities or County contracts. ▪ Charge residents for recycling service at rates reflecting the full cost of service, as per WUTC rate setting methodology. ▪ Choose where to deliver collected recyclables for sorting, unless otherwise directed by County or required by the WUTC to use an in-county facility.	▪ Potentially provide residential recycling collection under WUTC regulation, through direct contracts with PRO, or do not provide residential recycling collection, depending on whether policy exempts collection of residential recycling under EPR system from WUTC regulation. ▪ Deliver collected residential recycling to sorting facilities operating under the EPR system. ▪ Do not pass the costs of residential recycling collection service onto residents, but rather

	▪ Do not bear the risks associated with commodity price fluctuations.	receive reimbursement from producers via PRO.
WUTC	▪ Responsible for reviewing and approving rates to be charged to customers in WUTC-regulated areas and for overall regulatory oversight of private collection service provider operations. ▪ Responsible for ensuring compliance by recycling collection service providers with minimum service level requirements set in county solid waste management plans.	▪ If residential recycling exempt from WUTC regulation under EPR system, WUTC potentially no longer involved in regulating residential recycling collection. ▪ If collection under EPR system not exempted, the WUTC continues as regulatory authority for rate-setting and compliance oversight, with increased workload due to expansion of recycling service to all residential garbage customers.
Sorting facilities	▪ Receive residential PPP collected from collection service providers, sort materials into separate marketable commodities, and sell to reprocessors/end users. ▪ In many cases, collection service providers operate vertically integrated sorting facilities, with anticipated net costs/commodity revenues built into bundled collection service rates. ▪ In some cases, bear the risks associated with commodity price fluctuations and diminishing market values of PPP, because of the typical structure of contract pricing. ▪ Provide limited verifiable information about material flows, commodity buyers, and confirmation of responsible recycling outcomes, typically only as required by contracts and mandated state reporting. ▪ Invest in new sorting technologies as deemed economically advantageous or as needed to comply with contract terms.	▪ Provide post-collection sorting of residential PPP under contracts with PRO. ▪ Secure support for investments in new sorting infrastructure, technology, and systems to capture additional recyclables and improve quality of sorted materials. ▪ May provide PPP marketing services with appropriate end-market transparency but bear limited risk, if any, related to commodity price fluctuations and diminishing value of PPP materials.
Residents	▪ Participate in recycling where it is universally included in collection service or offered on a subscription basis, with disparate levels of convenience, varying degrees of education, and inconsistent rules. ▪ Pay for recycling collection, directly or indirectly, as part of solid waste services, often with little transparency about actual costs of services provided or outcomes achieved.	▪ Participate in recycling to the best of their abilities, based on consistent, comprehensive service and robust education. ▪ No longer pay for recycling collection as part of solid waste services. ▪ Have ready access to transparent, validated information about the costs and benefits of the residential recycling system.

Chapter 3. Costs and Financing Structure

3.1 Existing System Costs and Financing Structure

In 2017, the Department of Ecology documented the existing funding mechanisms for solid waste management in Washington State, including residential recycling service.[12] The study found that several state-level revenue sources—including the solid waste collection tax (SWCT), the hazardous substance tax (HST), and the litter tax—are in place that could be used to support financing of the existing recycling system. However, these funds have largely been redirected by state policymakers to support other state activities. Therefore, decisions and responsibilities for financing residential recycling programs generally fall to local governments under the existing system.

In many jurisdictions in Washington State, the costs of providing residential recycling have been embedded in garbage service rates, transfer station tip fees, or covered by solid waste taxes and invisible to residents, thereby making residential recycling under the existing system appear "free." Of course, collecting, sorting, and marketing recyclables from residents—not to mention financing resident education and contamination reduction efforts—is not free, although costs have historically been partially or fully offset by commodity revenues.

Residential recycling collection is generally financed through solid waste collection service rates paid by residents through utility bills issued either by local governments or by private collection service providers. The costs and financing structures differ depending on whether service is provided by contracted collectors, directly by local governments that operate their own municipal collection service, or by private collection service providers under the system regulated by the Washington Utilities and Transportation Commission (WUTC). Each of these collection service types is described in detail in Chapter 4. Recycling Collection.

Across all service arrangements, however, funding to cover recycling service costs is generally collected from residents through rates structured in one of three ways:

- **Embedded**: Financing for recycling is generated through garbage collection service rates and/or tipping fees, with no visible charge to residents for recycling service.

  This is the rate structure used under most contracted service and municipal collection programs. It is typically linked to Pay-As-You-Thrown (PAYT) variable garbage rate structures that vary based on the size of garbage container selected.[13] Publicly operated drop-off recycling collection is also typically funded, at least in part, through revenues collected on disposal tipping fees at publicly operated transfer stations and/or landfills.

- **Net service fee**: Recycling charged as a distinct service fee, typically calculated as a net cost – the combined costs of collecting and sorting collected recyclables minus the revenues generated from commodity sales and/or subsidies from other revenue sources.
  This rate structure is used under some contracted service and municipal collection programs.

[12] Cascadia Consulting Group, *Funding Mechanisms for Solid Waste,* Prepared for the Washington State Department of Ecology, 2017. https://fortress.wa.gov/ecy/publications/summarypages/1707016.html.
[13] Nickell, Tim, *Waste Not: How Washington State Residents Pay for Garbage, Recycling, and Organic Waste,* Prepared for the Washington State Department of Ecology, 2011. https://fortress.wa.gov/ecy/publications/documents/1607014.pdf.

- **Gross service fee with visible commodity credit/debit**: Recycling charged as a distinct service fee representing the gross cost of collection and sorting, with separate credit/debit representing the value/cost generated from processed commodities.

  This rate structure is required to be used for all WUTC-regulated service.

Table 2 shows the distribution of rate structures across service provider types for all service areas (including cities and unincorporated areas) in Washington State where curbside recycling collection service is available.

Table 2. Rate structures for curbside recycling service in Washington State (count of service areas)

Service Provider Type	Embedded in Garbage Rates [a]	Net Service Fee for Recycling	Gross Service Fee, Commodity Credit/Debit	Total
Municipal	7	3	0	10
Contracted	76[b]	22[c]	0	98
WUTC-regulated	0	0	110[d]	110
Total	**83**	**25**	**110**	**218**

[a] *Since 2018, numerous local jurisdictions with embedded recycling financing structures have implemented/ authorized visible recycling surcharges on residential rates.*

[b] *Residents in Klickitat County have the option to participate in a bag-based curbside recycling collection service provided for free by Republic Services as part of its long-term contract with Klickitat County for garbage disposal services.*

[c] *In 18 of the 22 service areas with net service fee structures served under contracted collection, recycling subscription is mandatory for residential garbage customers but charged as a separate fee. In four service areas, recycling is offered as an optional subscription service.*

[d] *Recycling subscription is mandatory for all residential garbage customers in 89 of the 110 service areas with WUTC-regulated service. In 21 service areas, recycling subscription is optional.*

The following section provides a summary of the financing structures and information about average service costs, where available, for each of these types of service arrangements. Research conducted for this study included an in-depth review of more than 20 service contracts including the largest jurisdictions with contracted recycling in the state and the four private collection service providers who serve the majority of jurisdictions with contracted recycling service. Current service tariffs and annual reports submitted to the WUTC by collection service providers operating under G-certificates were also reviewed. Some additional information was also gathered through phone interviews with residential recycling program managers. Additional research findings related to collection services throughout the state are discussed in Chapter 4. Recycling Collection.[14]

[14] Research was conducted in collaboration with Zero Waste Washington as part of a joint effort to document the extent and attributes of residential recycling service in Washington State. Information about service arrangements, costs, and financing structures was gathered through web-based research and reviews of program and service provider websites. Results are partially documented in the following report: Zero Waste Washington, *The State of Residential Recycling and Organics Collection in Washington State,* November 2019. https://zerowastewashington.org/wp-content/uploads/2019/11/Recycling-report-Nov-27-2019.pdf.

3.1.1 Costs and financing under embedded recycling collection service

Of the 218 service areas in Washington State with curbside recycling programs, 83 have embedded rate structures that charge residents for garbage service and provide recycling collection for "free" as a companion service. This is the most common financing structure for curbside recycling collection provided under contracted service arrangements.

The majority of residential service contracts in Washington State are held by vertically integrated companies with both collection and sorting operations for recycling, and most local governments included sorting and marketing of recyclables in their collection service contracts. These contracts use an embedded rate structure, meaning that that the costs to collect and market the recyclable materials is not shown separately from the cost to provide garbage service and recycling is automatically provided to all garbage customers.

These contracts typically state that the contracted collection service provider retains all revenues and/or bear all costs associated with sorting and marketing of collected recyclable materials. Historically, because sorting costs have been partially or fully offset by commodity revenues that have been retained by contracted recycling collection service providers—often with limited disclosure of specific tons and revenues generated—the true costs of recycling sorting (independent of commodity values) have not been clearly understood or documented in most jurisdictions with contracted, bundled service for residential collection.

The nature of embedded rate structures makes it difficult to assess average costs incurred by residents. However, the limited data available on costs for residential recycling under embedded rate structures indicate that residential customers receiving curbside recycling service under these arrangements are likely paying **$60 to $120 per year** through costs embedded in residential garbage rates. Examples of available data include the following:

- **Known recycling collection costs under embedded rates:**
    - The City of **Olympia** is a municipal service provider and tracks its costs for recycling collection separately from garbage collection, even though residents are charged through an embedded rate structure. According to the program manager, the estimated monthly cost of providing biweekly recycling collection is $6.29 per residential curbside customer, not including transport/sorting. Including transport/sorting costs increases the estimated cost to **$9.21 per month.**
    - The 2018 service contract between **Spokane Valley** and Waste Management includes line item pricing for contractor recycling collection fee of **$5.81 per month** for residential customers, not including administrative and service fees.
- **Recycling only service:** A few jurisdictions offer residents the option of subscribing to recycling only, without being a garbage subscriber. Examples of published monthly rates, as of January 2020, for cart-based recycling only service include:
    - **Mill Creek** (WM): **$5.91** for weekly collection
    - **Mukilteo** (WM): **$8.57** for biweekly collection
    - **Newcastle** (WM): **$9.67** for biweekly collection
    - **Spokane Valley** (WM): **$10.20** for biweekly collection

- **Sammamish** (Republic): **$10.32** for weekly collection

Aside from a few notable exceptions (namely, City of Seattle), under current contracts and embedded rate structures, private collection service providers with integrated recycling collection and sorting contracts bear substantial risk linked to the market values of collected materials. In previous market conditions, when market prices were high, contamination limits set by reprocessors and end markets were loose, and demand was strong, this allocation of risk/reward was beneficial to private collection service providers. But current market conditions, with tighter contamination limits, oversupply and relatively weak markets for many materials, have led to higher sorting costs and dramatically lower revenues from commodity sales.

Many contracted service providers have sought to add recycling surcharges to residential rates, ostensibly to cover the costs of additional sortation and other contamination reduction strategies needed to achieve more stringent quality standards now demanded by reprocessors and end users of recycled materials. But because of the limited information about sorting costs and net revenues prior to market changes, local governments find it difficult to assess whether the surcharges are justified. Of the 17 local governments in King County that have received requests for surcharges from their contracted service providers, only 9 have so far granted them. Surcharge amounts approved range from $0.76 to $2.26 per month, with an average of $1.40 per month.[15]

Seattle is unique in that it pays its sorting contractor a set per-ton sorting fee (set at $89.50 per ton of commingled material received as of April 2016, adjusted annual in accordance with a formula established in the contract), independent of commodity revenues, and then uses any revenues generated from the sale of processed materials to offset the costs of sorting. This arrangement makes it the only city in Washington State with contracted residential recycling service that bears the majority of the financial risk of recycling directly.

The seven local governments that act as municipal service providers with embedded rate structures also bear substantial risk under current arrangements and have experienced substantial declines in revenues due to dropping commodity prices since 2018. As a result, it is some of these municipal service providers that have initiated the most significant changes in recycling collection services, such as the removal of glass from residential collection (Tacoma, Olympia, Chelan), removal of aseptic/polycoated cartons (Olympia), and elimination of mixed paper collection (Chelan), and implementation of the highest sorting surcharge (Tacoma), a $2.82 per month charge instituted in January 2020.[16,17,18]

3.1.2 Costs and financing under net service fee recycling service

Only 25 local governments in Washington State provide recycling using a net service fee structure. Of those, three are municipal service providers and 22 provide net service fee recycling under contracted arrangements. Often, net service fee structures are used when recycling is offered as an optional service but some local governments choose to charge net service fees for recycling even when subscription is mandatory.

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[15] King County Solid Waste Division, "Contract Language, Surcharges and Waivers," Responsible Recycling Task Force Symposium Presentation, December 13, 2019.
[16] City of Tacoma, Recycling Changes webpage, https://cityoftacoma.org/cms/One.aspx?portalId=169&pageId=166678.
[17] City of Olympia, Recycling Changes webpage, http://m.olympiawa.gov/city-utilities/garbage-and-recycling/recycling-changes.aspx.
[18] Lake Chelan Now, "Curbside Recycling Starts this Week," May 6, 2018, https://lakechelannow.com/curbside-recycling-starts-this-week/.

Net service fees are designed to reflect the net cost of recycling collection and sorting minus commodity revenues. Due to rapidly changing commodity markets and subsidization of rates from other revenue sources, these rates may not fully represent true costs, but nonetheless provide information about the amounts currently being charged to residents for recycling service under these arrangements. Data on current rates collected for this study indicate that residential customers receiving curbside recycling service under these arrangements are likely paying **$40 to $136 per year** through net service fees. Examples of current net service fees include the following:

- **Friday Harbor** (municipal): **$2.00 per 32-gal container** (no glass, optional), $7.50/CY for cardboard
- **Sedro Woolley** (municipal): **$3.28 per month** for biweekly collection (no glass, mandatory)
- **Vancouver** (Waste Connections): **$4.86 per month** for biweekly collection (glass separate, mandatory)
- **Walla Walla** (Basin Disposal): **$5.04 per month** for biweekly collection (no glass, mandatory)
- **Richland** (municipal): **$6.60 per month** for biweekly collection (no glass, optional)
- **Liberty Lake** (WM): **$7.82 per month** for biweekly collection (no glass, optional)
- **Clark County – Urban** (Waste Connections): **$7.85 per month** for weekly collection (glass separate, mandatory)
- **Clark County – Rural** (Waste Connections): **$8.44 per month** for weekly collection (glass separate, mandatory)
- **Sultan** (Republic): **$9.57 per month** for weekly collection (mandatory)
- **Leavenworth** (WM): **$11.34 per month** for biweekly collection (no glass, optional)

Under net service fee rate structures, local governments that provide municipal service and contracted service providers bear less risk. Instead, it is residents who bear the primary financial burden of recycling. This is especially true for residents who choose to recycle in areas where recycling subscription is optional, which also tend to be places further from sorting infrastructure and/or end markets where recycling is less efficient and more expensive.

3.1.3 Costs and financing under gross service fee with commodity credit/debit (WUTC-regulated rates)

Outside of jurisdictions with contracted or municipal recycling collection, residents with access to curbside or multifamily recycling receive the service from designated private collection service providers, with costs and rates structures regulated by the WUTC. According to the rate-setting methodology required by WUTC, collection service providers must set rates for recycling collection, separate from garbage collection and independent of commodity revenues, that represent the actual cost of service plus a rate of return established by WUTC in its rate-setting methodology. Collection service providers then provide a separate commodity credit or debit to reflect the net cost of sorting and or net revenues generated by commodity sales.

As a result of this rate structure, recycling collection service providers operating under WUTC regulation do not bear the risks associated with commodity price fluctuations and diminishing market values of residential PPP, as the costs and benefits associated with residential recycling are passed on to residents in accordance with WUTC rate-setting regulations.

A review of the 32 different published WUTC-approved tariffs with curbside recycling analyzed in October 2019 indicates that residential customers receiving recycling service under WUTC-regulated service are paying an average of **$118 per year** (net of the debit/(credit) allocated in WUTC tariffs) for recycling service as residential garbage customers. Residents subscribed to recycling only service are paying an average of **$126 per year**.

Residential rates in WUTC-regulated service areas appear to differ primarily based on geographic differences. Table 3 shows the average monthly rates for residential recycling in WUTC-regulated service areas overall and by region.

Table 3. Average monthly rates for curbside recycling collection under WUTC-regulated service[19]

Statewide (with garbage service)	Statewide (recycling only service)	Central	East	Northwest	Puget Sound	Southwest	West
$9.88	$10.54	$14.58	$7.70	$8.62	$9.35	$8.24	$10.95

The frequency of recycling collection (weekly/biweekly/monthly) and whether glass is included in curbside collection do not correspond predictably to monthly service rates relative to other service types across regions but may explain some differentiation of rates within a given region.

Rates charged for multifamily recycling under WUTC-regulated service vary in their structure, with some charged on a per-unit basis, some on a per-yard basis charged by garbage subscription levels, and some charge on a per-yard basis for recycling subscription directly. Monthly per-unit rates for recycling range from $1.65 to $7.87 (net of debit/credit), with an average rate of $4.72 per unit per month.

3.1.4 Costs and financing of drop-off recycling

Most counties and some cities also provide drop-off recycling for rural residents without access to curbside collection or for residents with large quantities of materials or other periodic recycling needs. Publicly operated drop-off recycling is generally financed through some combination of residential garbage service rates (if the local government providing curbside service also operates or contracts for drop-off recycling), solid waste service taxes charged on garbage service rates, and through landfill and/or transfer station tip fees collected by the jurisdictions that operate such facilities. Many local governments also rely on state grant funds to support drop-off collection services, although these funds have been shrinking and unreliable in recent years.

3.1.5 Challenges of existing system approaches to financing residential recycling

There is growing recognition among local governments and at the state level that the current approaches to financing residential recycling are unreliable and inadequate for the needs of a responsible recycling system. Key challenges of existing system approaches to financing include:

- **Reliance on waste disposal for funding of recycling services.** In many service areas, the funding for recycling programs comes primarily from rates charged for disposal. As more material is eliminated (e.g. through light weighting and waste prevention) or diverted from the waste stream (e.g. through organics collection programs), there is less revenue available to fund these programs, despite the growing costs of responsible recycling.

[19] Average rates are based on data collected from published tariffs, available on the WUTC website here: https://www.utc.wa.gov/regulatedIndustries/transportation/solidWaste/Pages/SolidWasteCompanyTariffs.aspx. Note: Average rate calculations are unweighted, meaning that they don't take into account the proportions of residential customers paying under each tariff.

- **Pattern of redirection of solid waste-related revenues at the state level.** Several state-level revenue streams generated from waste-related taxes that once provided financial support for recycling infrastructure, market development, and resident education—including the solid waste collection tax (SWCT), the hazardous substance tax (HST), and the litter tax—have largely been redirected to support other state activities.

- **Increasing cost of providing recycling collection is not aligned with existing rate structures.** Changes in packaging design (light weighting, material substitution, new packaging formats) and dropping commodity prices are driving the per-ton value of recycling down. At the same time, the increasing presence of contamination in collected materials is driving up sorting costs, decreasing the quality of recyclable commodities and requiring additional investments in resident education and contamination reduction efforts. However, because current rate structures for contracted and municipal recycling depend on revenues from the sale of recyclable commodities to help cover collection and sorting costs, in times when commodity prices are down, recycling system costs are not adequately covered.

- **Lack of coordination and absence of economies of scale to support large-scale investments.** On their own, local governments cannot reasonably be expected to make the investments in infrastructure, programs, and market development to adapt to the rapidly changing recycling landscape that is being influenced by regional, national, and international forces beyond their control. Yet, under the existing system, funding for development of the recycling system comes primarily from local governments and their residential rate payers. In the absence of regional or state-level policy and coordination, local governments do not have the ability to leverage the economics of scale often required to catalyze or support large-scale investments like those needed for new facilities, commercialization of new technologies, or other innovations for recycling an increasingly complex material mix.

3.2 Costs and Financial Structure under EPR Policy

Under the policy framework laid out in Chapter 1, producers would be financially responsible for all activities undertaken to achieve the performance requirements defined in the policy, including the collection, transportation, and end-of-life management of PPP materials from residential sources.

This section describes a conceptual model for how producers would provide funding to fulfill their obligations under the policy framework. This model is based on data and best practices identified for financing structures of existing producer-funded EPR programs for PPP in Europe and Canada. This section also provides estimates around per-household costs of a model EPR system and describes how the transition to a producer-funded approach might affect residents and local governments in Washington State.

3.2.1 Producer funding and fees

To meet their funding obligations and mandated performance requirements, it is assumed that the non-profit producer responsibility organization (PRO) which would be responsible for developing the fee structure and collecting fees from member producers. The collected fees would be used to fund the costs of operating a reverse supply chain for residential PPP in in accordance with the performance requirements specified in the policy.

Eco-Modulation of Producer Fees in France*

The EPR system for PPP in France is implemented by a single PRO, CITEO, which manages all aspects of the system on behalf of producers. EPR for PPP has been in place in France since 1992 but the system's approach to producer funding was recently updated to more directly address lifecycle impacts of PPP through the use of an eco-modulated fee structure. Under the new structure, fees are assessed based on the weight of the packaging supplied into the market, as well as additional per-pack fees. The eco-modulated fee system rewards certain designs through discounts and penalizes others through fee increases. The eco-modulation currently focuses primarily on recyclability and recycled content but the approach is expected to go further to address the carbon footprint of packaging in the future. Examples of eco-modulation elements of fee-setting include:

- Penalties are set for packaging designs that are disruptive to recycling systems, including:
  - PET packaging that uses additives to make them opaque at greater than 4% receives a 100% cost penalty (i.e. doubling the standard weight-based fee for that packaging type).
  - Non-recyclable plastic bottles (i.e., PVC, LDPE, PS or other plastic) receive a 100% cost penalty.
  - Certain other disruptive packaging designs, such as glass with a porcelain stopper, or PET bottles that contain PVC, aluminum or silicone, receives a 50% cost penalty.

- Discounts are provided to certain environmentally preferable packaging, including:
  - PE, PP, or paper packaging that contains at least 50% recycled content.
  - Packaging that includes recyclability improvements such as switching from a multi-material package to PET.
  - Packaging that displays proper recycling guidelines.

To help member producers make better packaging design decisions and avoid these penalties, CITEO offers its members free access to life-cycle analyses and tools that help design packaging for recycling.

**Program details drawn from the following report: RRS,* Legal Relational Frameworks Overview*, Submitted to Oregon Recycling Steering Committee, December 2019.*

Based on the approach used in other EPR systems, it is anticipated that the PRO would collect fees from obligated producers based on the weight and environmental attributes of different packaging materials sold into the Washington State market. In accordance with best practices for fee-setting in existing EPR systems, it is expected that the fee structure adopted by the PRO would abide by the following principles:

- **Fees reflect the full costs** of all administrative and operational activities undertaken to meet producers' obligations and achieve mandated performance requirements.
- **Different fees charged for each material type and format**, based on each material's cost to collect and manage, net of revenues generated from the sale of that material.[20]

[20] The Canadian Stewardship Services Alliance has a major project underway—the Material Cost Differentiation (MCD) Project—to develop a methodology for measuring material-specific costs required for calculating material-specific fee rates for the Four Step Fee Methodology used by Packaging and Paper Stewardship programs in Canada. More information on the project is available online at https://www.cssalliance.ca/mcd/.

- **Eco-modulated fee structure** used to encourage and reward the design of easily recyclable packaging and use of recycled content (or other design attributes), and to discourage or penalize the use of packaging that is disruptive to recycling systems.

Examples of stewardship fees for different packaging material types and formats under existing EPR systems in Canada are publicly available on the websites of the producer responsibility organizations.[21]

Based on producers' practices under existing EPR for PPP systems in Europe and Canada, it is assumed that fees would be internalized by producers, similar to the way product pricing structures incorporate other costs of production, such as utilities (e.g. electricity, fuel), product ingredients, and raw materials. If desired, internalization of fees could also be mandated as part of the state policy.

3.2.2 Costs and financing for residential recycling under model system

This section describes the anticipated financial structures of a model EPR system based on the policy framework laid out in Chapter 1, EPR Policy Framework. This study does not attempt to estimate the costs of the model system—developing such an estimate would take significant additional research and analysis—but does provide information about system costs for existing EPR for PPP systems in Europe and Canada.

It is assumed that the PRO would enter into two types of contracts—collection and post-collection—to establish the terms of cost coverage, financing, and system operations under the EPR system. Costs for the model system would be driven in large part by the approaches taken to these contracts and their specific terms. Detailed scenarios describing how the model system might be structured for each of these elements are described in subsequent chapters (Chapter 4 addresses collection and Chapter 5 addresses post-collection).

Collection costs and financing

Under the policy framework, the PRO would be responsible for paying the full costs of collection of residential PPP in accordance with the statewide service requirements established. The costs and financial structures could be determined in one of three ways:

1) **Competitive bid procurement:** In areas where the PRO would be responsible for providing service directly (e.g. in cities that no longer want to act as service providers or do not currently provide recycling collection, in areas where drop-off recycling infrastructure is needed), the PRO would contract with private collection service providers directly, using a competitive bidding process. In this case, the costs of service would be determined by the market based on the terms of service requested, just as municipal collection contracts are under the existing system.

2) **Negotiated reimbursements to local governments:** In jurisdictions where local governments choose to continue to act as recycling collectors (directly or via contracted service providers), the PRO

[21] Fees for Recycle BC, which covers 100% of residential recycling costs, available online at https://recyclebc.ca/stewards/feespayments/stewards-fee-schedule/.
Fees for Eco Enterprises Quebec, which covers 100% of residential recycling costs, available online at https://www.eeq.ca/en/for-companies/fee-structure/understanding-the-schedule-of-contributions/.
Fees for Multi-Material Manitoba, which covers 80% of residential recycling costs, available online at https://stewardshipmanitoba.org/stewards/fees-and-payments/.
Fees for Stewardship Ontario, which covers 50% of residential recycling costs, are available online at https://stewardshipontario.ca/stewards-bluebox/fees-and-payments/.

would provide reimbursement to the local governments. As discussed in the existing system description above, isolating the costs of recycling collection under current contract arrangements is challenging, so the true costs of recycling collection alone are not yet well understood or documented for many jurisdictions. Coming up with a reimbursement approach/formula that is perceived as fair and sufficient to local governments would be a major task of the consultation process that would be required by the policy.

3) **WUTC rate-setting methodology:** If the policy did not exempt residential recycling collection under an EPR system from WUTC regulation, then service in WUTC-regulated areas would be need to be provided by G-certificate collection service providers and the PRO would reimburse for these services at rates determined using the WUTC rate-setting methodology, with oversight by the WUTC.

Establishing Municipal Reimbursements for Collection in Belgium*

In Belgium, where EPR for a narrow range of PPP materials has been in place since 1994, producers are fully responsible for funding collection and sorting of a selected list of packaging materials (but not paper products or paper products)but local governments continue to act as collection service providers for residents and receive reimbursement from producer-responsibility organization (FOST-Plus) for the portion of their costs related to collection of the obligated packaging materials. Reimbursements to municipalities are determined based on one of four methods:

1) **Real and complete cost:** If a municipality can provide detailed information on costs associated only with management of the materials covered by the EPR system and verifiable information about the tons handled, FOST-Plus reimburses the full and complete cost reported.
2) **Mutual agreement**: If costs of managing covered materials cannot be isolated, FOST-Plus and the municipality can reach a mutual agreement on the costs to be reimbursed by FOST-Plus.
3) **"Standard" cost:** Alternatively, a municipality can join with other municipalities and form an inter-municipality. It can then rely on the IPC (a public entity with representatives from municipalities in Belgium's three regions) to establish reasonable costs for reimbursement to the designated group of municipalities. FOST-Plus then pays a 'reference cost' to the inter-municipality group of intended to cover the average cost incurred in the selective collection and sorting of packaging waste for a standard level of service.
4) **Special fixed reimbursement for additional collection:** If a municipality decides to complement the "standard" level of service with additional collection rounds (e.g. weekly instead of biweekly), FOST-Plus reimburses the real and complete cost for the "standard" level of service and provides an additional contribution based on the additional quantities of materials collected through the additional collection rounds.

Apart from collection costs, FOST-Plus also pays municipalities bonus incentives based on material quality.

**Program details drawn from the following report: Kelleher and Love,* EPR Case Study Report*, Submitted to Regional Public Works Commissioners of Ontario, May 2014.*

Post-collection costs and financing

Under the policy framework, the PRO would be responsible for paying for all post-collection activities—from the point at which collection vehicles transfer collected loads to delivery of marketed materials to reprocessors or end users—as required to achieve the performance requirements established in the policy.

In other EPR systems, the PRO obtains these services through a **competitive bid procurement** process. Similar to the competitive bid procurement describe for collection service above, the PRO would establish terms of service requested and the costs of service would be market-based. Private service providers would bid on the contracts and propose pricing based on their estimates of capital and operating costs plus a reasonable return as needed to make the contract financially viable from the service provider's perspective. The PRO would select from among the proposals based on an evaluation of anticipated service quality and value.

As with collection, there are many outstanding questions around the costs of post-collection activities, especially because much of the infrastructure and system integration that would be needed to support a statewide EPR system and achieve the performance requirements outlined in the policy framework does not currently exist in Washington State. Extensive consultation with local governments as well as with existing and potential private service providers would be an essential task for the PRO to inform development of the service procurement details and process.

However post-collection services are procured, it is assumed that the PRO would **retain ownership of the PPP materials collected** and would **use revenue generated from commodity sales to offset the net costs of the system** to producers while at the same time **requiring producers to assume the risk associated with recycled commodity price fluctuations**. This would provide producers an incentive to maximize the value of materials collected by prioritizing the use of recyclable packaging, investing in contamination reduction efforts, and encouraging residents to recycle high-value materials. They would also have an incentive to support market development efforts to increase demand for collected materials.

Model system principles around costs and financing

While the specific details and drivers of costs and financing under an EPR system would need to be further developed through the consultation and stewardship plan development process, the model system would be designed according to key principles around costs and financing:

- System costs will reflect the level of funding that is necessary to finance a residential recycling system that efficiently provides service in accordance with the statewide collection and performance requirements established in the policy.

- A producer-funded "statewide system" approach to residential PPP recycling will provide needed funding and financial stability for investing in new collection, consolidation, and sorting infrastructure; maintaining high worker health and safety standards; and supporting and expanding domestic reprocessing and end markets needed to ensure true recycling occurs (i.e. actual utilization of collected materials in new products).

- Unlike much of the financing under the existing system, an EPR system will provide transparency around how the residential recycling system is funded, what the "true costs" of recycling collection and sorting are, and what outcomes are accomplished with recycling system funding.

Overall, costs under the model 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 will be needed, leading to higher overall system costs.

Whether overall costs of the model system would be higher or lower, they would be more stable than the existing system and would be better insulated from market volatility 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 implementation of the EPR policy framework.

Based on experience from existing programs, it is assumed that the PRO will seek to maximize system efficiencies while still fulfilling producers' obligations set out in the policy. Strong mandatory convenience and performance requirements combined with an effective enforcement mechanism will result in more robust financial support for a PPP recycling system.

3.2.3 Impacts of costs and financing for residents and local governments under model system

Under the EPR system, as under the existing system, residents would still play a role in financing the recycling of PPP. Under the model system, residents would no longer be charged for curbside recycling either as a direct service fee or embedded in garbage rates. Instead, the producer would include the fee they are charged by the PRO (based on their reported sales of packaging material by weight and type) in the price of product and would pass the cost on to the consumer.

This approach to financing gives residents more direct control over how much they pay, as their contributions to the system are directly linked to how much packaging they purchase. Data from existing EPR systems indicate that these costs tend to be small, typically less than one-half of one percent of a product's price for most packaging, and consumers do not feel the impact of material fees on a per-item basis.[22] Under most well-designed fee structures, residents could expect to pay the most for e-commerce purchases delivered to their homes, due to the amount of packaging used for shipping.

Evidence from other EPR systems suggests that residents pay less for recycling under an EPR system that they due under a rate payer system. They have more direct control over how much they pay and with greater transparency about the outcomes that are achieved with the funding.

As consumers, residents could choose to purchase items with less packaging and could send market signals to companies that they prefer products with less packaging through their purchasing habits while still having access to a sustainable PPP recycling system funded through purchases of products with packaging.

[22] Canadian Stewardship Services Alliance, *Report to Stewards: 2019 Annual Meeting*, https://www.cssalliance.ca/wp-content/uploads/2019/10/CSSA_ReportToStewards_2019_Final.pdf

Average Costs of EPR Systems in Europe and Canada*

EPR systems for PPP can often lead to lower per-capita costs compared to decentralized, government-run systems because they enable system efficiencies through coordination and economies of scale. EPR consultancy EPI/Lorax Compliance estimated per-capita costs for EPR for PPP systems in Europe and Canada. These estimated costs, adjusted to reflect assumed average annual system costs for a 4-person household, are as follows (all amounts reported in US dollars):

- France (CITEO, 2017): $46.68
- Belgium (FOST-Plus, 2017): $58.44
- British Columbia (Recycle BC, 2018): $58.20
- Quebec (Eco-Enterprises Québec, 2018): $62.56

A separate assessment of current producer fees in BC (as of January 1, 2020) carried out for this study indicates that fees average out to less than $0.50 per $100 of groceries. Data from Statistics Canada suggests that consumer spending on groceries in BC has not changed significantly since the implementation of EPR, and trends appear similar to spending by residents in provinces without EPR systems in place.

**Average system costs drawn from the following presentation: EPI/Lorax Compliance, Product Stewardship: What Does Global EPR Currently Look Like? Presentation to the Conference on Canadian Stewardship, November 2019.*

Data from Statistics Canada available at: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110012501&pickMembers%5B0%5D=1.1

3.3 Transition Considerations for Costs and Financial Structure

Under the conceptual model, the transition to a producer-funded EPR system in Washington State would be a 3-to-5-year process following adoption of the policy. As a first step after adoption of the policy, producers would form a PRO to act on their behalf, and the PRO would carry out extensive research and consultation in order to develop a plan for how the EPR system will be structured and operated to achieve the requirements of the policy.

Stakeholders would have ample opportunity to provide input and make necessary preparations well in advance of any financial or operational transition. The PRO would also need to establish its eco-modulated fee structure and collect funds from producers prior to initiating system operations. To facilitate harmonization of eco-modulation criteria across EPR systems and streamline fee collection, it is expected that the PRO would align its' fee-setting methodology with one used by other EPR programs, such as the Material Cost Differentiation methodology currently being developed by the Canadian Stewardship Services Alliance. The regulatory agency responsible for compliance oversight and enforcement in Washington State could also play a role in setting parameters for eco-modulation of fees to ensure that the fee structure is designed to encourage and reward the design of easily recyclable packaging and use of recycled content (or other design attributes), and to discourage or penalize the use of packaging that is disruptive to recycling systems.

Once the EPR system commenced, the PRO would begin making payments to contracted service providers and providing reimbursements to local governments that choose to continue to act as recycling collectors.

Local governments that collect funds from residents for recycling services would need to determine how to pass along the reimbursements to residents. Residents who had been paying for these services under the existing system might receive a credit on their bills, pay lower rates for garbage service, or have the opportunity to receive other recycling or waste prevention services provided by the local government instead. Private collection service providers that previously billed residents directly for recycling service would receive payments from the PRO and would remove those charges or

include rebates on residential customer bills to reflect the reimbursements received.

Due to uncertainties around true costs of service under integrated service contracts and embedded rate structures, it is possible that the reimbursements received from the PRO would not fully cover costs incurred for recycling service under existing contracts. To ensure full reimbursement of service costs, local governments would need to renegotiate service contracts or wait for a new contract cycle and utilize a contract pricing structure and scope that would enable greater transparency around recycling collection costs and facilitate full reimbursement of collection costs by the PRO.

Transition considerations around collection contracts are discussed further in Chapter 4, Recycling Collection.

Chapter 4. Recycling Collection

4.1 Existing Recycling Collection System

4.1.1 Residential recycling regulations, authority, and access to recycling collection service

Counties, in coordination with Cities, are responsible for establishing requirements for residential recycling services in their comprehensive solid waste plans per State waste reduction and recycling regulations (RCW 70.95).[23] Plans must reflect the waste management hierarchy which emphasizes reuse and recycling over landfilling or incineration. The plans also set the requirements for the levels and types of recycling service to be provided.

Although **no statewide mandate exists for residential recycling services**, RCW 70.95 requires that Counties at least consider and plan for programs that recover paper products, metal, glass, and plastics, including through the collection of "source-separated" materials from residents.[24]

Each County's plan establishes the specific recycling services that must be provided in its designated urban and rural areas, along with criteria used for designating areas as urban versus rural. In urban areas, Counties are directed by state law to require curbside recycling collection from single and multifamily residences, unless such a requirement is determined to meet specific criteria, such as lack of access to markets for recyclable materials or unreasonable cost impacts to the ratepayer.

Most large urban areas of the state have residential curbside recycling services for packaging and paper. In more rural areas, drop-off programs are provided. Under current Washington State law, Counties are responsible for overall planning and oversight of residential recycling services and education throughout the unincorporated areas of their jurisdictions. Incorporated cities and towns may choose to take responsibility for the development of recycling programs in their jurisdictions. Cities that choose not to take responsibility for recycling programs then fall under County jurisdiction for residential recycling as well.

In rural areas, Counties must ensure the provision of drop-off collection of designated recyclables at solid waste transfer, sorting, or disposal sites, or at other locations convenient to the residents of the county.[25] County plans also designate the materials considered to be recyclable in that county and therefore necessary to include in the recycling services deemed required.

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[23] https://app.leg.wa.gov/RCW/default.aspx?cite=70.95.

[24] Legal Note: Per RCW 70.95 (https://app.leg.wa.gov/RCW/default.aspx?cite=70.95.030) and WAC 480-70-41 (https://apps.leg.wa.gov/wac/default.aspx?cite=480-70-041), "source separation" means "the separation of different kinds of solid waste at the place where the waste originates" and "residential recycling service" means "collection of those solid wastes that are separated for recycling or reuse, such as paper, plastic, metals, and glass, that are identified as recyclable materials pursuant to a local comprehensive solid waste plan." This means that as long as recyclable materials are separated from other non-recyclable solid wastes at the place of origin (e.g., an individual residence), residential recycling service is considered "collection of source-separated materials," even when different types of recyclable materials are commingled for collection.

[25] Although county governments make this designation in solid waste management plans, there is no statewide tracking of this information, so the percentage of the population that resides in designated urban areas compared to designated rural areas is unknown.

Curbside Recycling Collection

Research completed in collaboration with Zero Waste Washington found that 58% of Washington State jurisdictions (186 of 320 total jurisdictions) have curbside recycling available to residents, either as a universal or optional service.[26]

A report on recycling service access published by the Washington State Department of Ecology in 2016 indicated that 88% of people living in single family homes live in areas with curbside collection programs. However, this estimate does not indicate whether residents in areas where curbside recycling is an optional subscription service have actually subscribed.[27]

The curbside recycling program analysis conducted for this study indicated that 86% of curbside recycling collection programs are provided universally to all residents with garbage service, either embedded in garbage rates or as a mandatory bundled subscription accompanying curbside garbage service. Because most curbside programs are provided on a universal and/or mandatory basis, subscription rates in areas where curbside collection is optional are much lower than the statewide metrics suggest. For example, in Richland, only 27% of residents are reported to subscribe to curbside recycling collection service, and in Yakima, only 7% of residents subscribe.[28]

There is no curbside recycling available in 11 of Washington State's 39 counties, either because they have no designated "urban areas" or because the County solid waste management plan does not require curbside collection in urban areas for some reason. Curbside garbage collection, however, is available to residents in at least some areas in all 39 counties in the state.

Multifamily Recycling Collection

Ecology's 2016 report also indicated that 77% of people in multifamily buildings live in areas where recycling service is required to be *offered* to multifamily buildings.[29] However, this estimate does not indicate whether these residents *actually* have curbside/onsite access, which often depends on whether they live in buildings with owners or property managers that choose to sign up for service in places where it is not mandatory.

Many local governments that provide universal curbside recycling for single family residents also offer onsite recycling service for multifamily buildings, but this service is more frequently offered as an optional subscription by collection service providers compared to single family residential collection. In some jurisdictions, multifamily service is not required to be offered and is left entirely optional and up to private sector collection service providers to provide. Overall levels of recycling service coverage for multifamily residents are not currently known, given limited data tracking and reporting related to multifamily recycling service. According to previous research conducted in the state, even when offered, multifamily recycling service is generally inadequate in terms of onsite collection capacity and

[26] Zero Waste Washington, *The State of Residential Recycling and Organics Collection in Washington State,* November 2019. https://zerowastewashington.org/wp-content/uploads/2019/11/Recycling-report-Nov-27-2019.pdf.
[27] Washington State Department of Ecology, *Residential Recycling in Washington State: Access Map*, 2016
[28] Richland data from *Benton County Solid Waste Management Plan – 2013 Update*, p.3-15. Yakima data from *City of Yakima Recycling and Processing Options,* produced by Green Solutions Environmental Consulting, June 2017.
[29] Washington State Department of Ecology, *Residential Recycling in Washington State: Access Map*, 2016

infrastructure, less convenient than garbage collection, and beset with other barriers to effective resident participation.[30]

Drop-off Recycling Collection

Collection of packaging and paper for recycling is also currently performed through publicly owned and/or funded drop-off locations, comprising both transfer stations and dropboxes, often in areas where curbside service is not available or optional, or for specific materials not included in an area's curbside collection programs. Zero Waste Washington identified a total of 171 such locations in local governments' online published materials, most of them located in the East area (41), followed by the Central area (39) and Puget Sound (37) area. At a state level, this equates to an average of 2.3 drop-off locations per 100,000 inhabitants, although with wide variations in different waste generation areas.[31]

4.1.2 Recycling collection service providers

In the 186 jurisdictions where curbside recycling collection is offered, it is provided in one of three ways:

- **Municipal Collection**: Cities can choose to be the exclusive direct collector of residential recyclables. Cities can offer this service on a subscription basis or as a required service, unless required for all residents in the relevant Solid Waste Management Plan. *10 jurisdictions (5%) provide municipally operated curbside collection.*
- **Contracted Collection**: Alternatively, Cities can contract with private collection service providers for the exclusive collection of residential recyclables in their jurisdiction. Per RCW 36.58.040, Counties may also choose to contract for residential recycling collection in unincorporated areas and in cities without their own contracted or direct collection service.[32] *96 jurisdictions (52%) provide contracted curbside recycling collection.*
- **WUTC-Regulated Collection**: In unincorporated areas and in cities that do not choose one of the options above, the solid waste collection company designated by the Washington Utilities and Transportation Commission (WUTC) for that geographic area through a "G-certificate" is required to provide recycling collection on a subscription basis to residential customers within the areas designated as urban or otherwise eligible for curbside service access. Operations of G-certificate collection service providers are regulated by the WUTC under the terms of RCW 81.77. WUTC-regulated service is offered on a subscription basis for a separate monthly rate using a rate calculation specified and reviewed by the WUTC, based on the service requirements established in the relevant Solid Waste Management Plan. Solid Waste Management Plans may specify that all residents with a curbside garbage service subscription must also be subscribed to recycling service or may require that G-certificate collection service providers offer recycling service to residential customers but leave subscriptions optional. In areas designated as rural (which sometimes cover entire counties), SWMPs may not require G-certificate collection service providers to offer recycling service to residential garbage customers at all. *80 jurisdictions (43%) have curbside recycling provided by G-certificate collection service providers under WUTC regulation.*

[30] Washington State Recycling Association, "Sorting It Out: The State of Multifamily Recycling in Washington State." July 2014. https://www.wsra.net/assets/docs/Resources/Multifamily/sorting_it_out-the_state_of_.pdf
[31] Zero Waste Washington, *The State of Residential Recycling and Organics Collection in Washington State,* November 2019.
[32] https://app.leg.wa.gov/RCW/default.aspx?cite=36.58.040

A total of 24 private collection service providers were identified as providing residential recycling collection in Washington State out of 41 private collection service providers identified as providing residential garbage collection. The majority of these collection service providers hold G-certificates and collect recycling both through WUTC-regulated service and under contracted services on behalf of local governments.

Three private collection service providers (Recology Cleanscapes, University Place Refuse, Hometown Sanitation) collect garbage and recycling under contracted service only. Several more private collection service providers collect garbage under both contracts and WUTC regulation, but only provide residential recycling under contracted service.

In areas with G-certificate collection service providers, residents do not have a choice of service providers – they must subscribe (if required) for service with the designated G-certificate collection service provider for that area and must pay the WUTC-authorized rates. If residential recycling service is not provided, residents do not have the ability to seek service from other providers.

Table 4. Washington State Recycling Collection Service Providers and Number of Service Areas, by Type

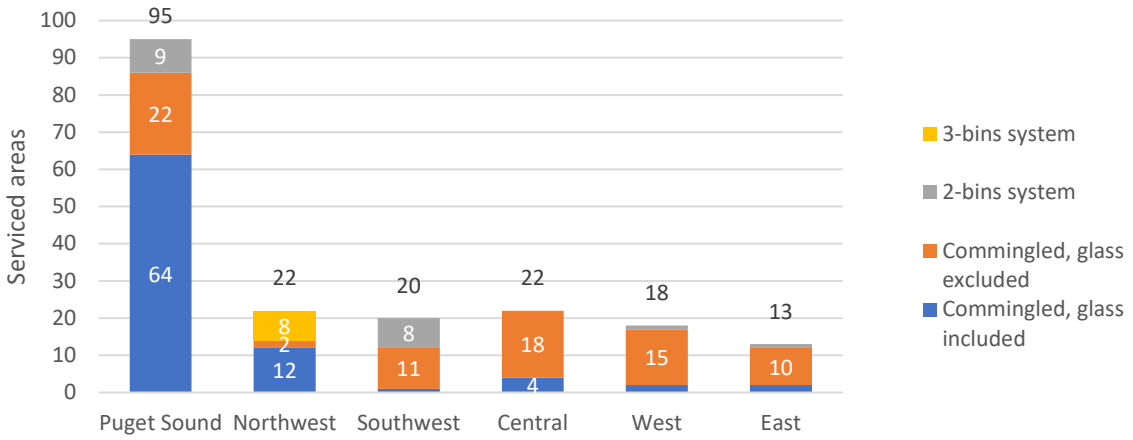
Recycling Collection Service Provider	WUTC Permit #	Contracts	WUTC Areas	Total
Waste Connections*	9, 98, 253, 87	13	49	62
Waste Management of Washington, Inc.	237	38	23	61
Republic Services	12, 60	16	16	32
Recology Cleanscapes	contract only	10	0	10
Nooksack Valley Disposal, Inc.	166	4	2	6
Sanitary Service Company, Inc.	14	2	3	5
Mason County Garbage Co., Inc.	88	1	3	4
Methow Valley Sanitation Service, Inc.	146	0	3	3
San Juan Sanitation Company	104, 260	0	3	3
Sunshine Disposal & Recycling	143	2	0	2
Bainbridge Disposal, Inc.	42	0	2	2
Pullman Disposal Service, Inc.	144	0	2	2
University Place Refuse Service, Inc.	contract only	2	0	2
Waste Control, Inc.	101	2	0	2
Yakima Waste Systems, Inc.	89	0	2	2
Basin Disposal	45, 165	2	0	2
Island Disposal, Inc.	154	1	0	1
Community Waste & Recycling	219	1	0	1
Freedom 2000 LLC	63819	0	1	1
Rubatino Refuse Removal, Inc.	58	0	1	1
Sound Disposal, Inc.	82	0	1	1
Zippy Disposal Service, Inc.	121	0	1	1
Hometown Sanitation, LLC	contract only	1	0	1
Consolidated Disposal Service Inc.	190	1	0	1
Total		**96**	**112**	**208**

4.1.3 Recyclable materials collected and method of collection

Each County designates the list of recyclable materials in their Solid Waste Management Plan that should be collected from residents and can specify whether the materials must be collected curbside or at drop-off locations, as well as what curbside collection method must be used. The designation determines what and how G-certificate collection service providers must collect from residents through curbside recycling collection provided to residents in WUTC-regulated areas. King County includes service requirements and materials designated for collection in the unincorporated areas in King County Code (KCC 10.18).

Cities that conduct municipal collection or contract for recycling service can determine how to collect materials and can add materials to the minimum recycling list designated by the County, usually by mutual agreement with their collection service provider.

Nearly half (45%) of residential recycling programs in Washington State use a "single-stream" commingled collection system with glass included. An additional 41% of programs use "single-stream" collection but exclude glass from the list of materials accepted. The remaining programs collect glass curbside but keep it separate from other materials, either via a two-cart/bin system (10% of programs) or a system using three stacking bins (4% of programs).[33]



As documented by the Zero Waste Washington report, most curbside recycling programs accept materials such as cardboard, mixed paper, aluminum and steel cans, plastic bottles and jugs (typically restricted to #1 PET and #2 HDPE resins), but far fewer collect other types of rigid plastic packaging, aseptic/polycoated cartons, or other less prevalent and/or less readily recyclable packaging and paper. Glass containers are collected through curbside recycling programs in 110 jurisdictions and through drop-off collection in 109 jurisdictions.

Some jurisdictions accept a wider range of materials through drop-off collection, but certain materials still have very limited collection for recycling. According to Zero Waste Washington, as of October 2019, only 46 jurisdictions (14%, out of 320) collected expanded polystyrene foam packaging and only 37 jurisdictions (12%) collected recyclable plastic bags and film through public curbside and/or drop-off programs. King County jurisdictions, including the City of Seattle, stopped accepting plastic bags and film in their curbside recycling programs as of January 1, 2020.

[33] Zero Waste Washington, *The State of Residential Recycling and Organics Collection in Washington State,* November 2019.

With changes in recycling markets, several local governments have been changing their list of accepted materials. The Cities of Tacoma, Olympia, Oak Harbor, Ellensburg, and others have dropped glass from their curbside collection programs; the City of Chelan dropped "mixed paper"; a number of local governments, including the Cities of Walla Walla and Kelso and Klickitat County, have dropped some or all plastics; and City of Olympia and some areas of Pierce County have dropped polycoated and aseptic cartons.[34] All of these changes have been attributed to weak markets, increasingly stringent contamination standards, increasing sorting costs, and other recycling system challenges.

4.1.4 Education and outreach

Resident education and outreach related to recycling is generally undertaken by the jurisdiction responsible for residential recycling collection, either directly or through contracted service providers. Education and outreach in most jurisdictions involve periodic mailings, bill inserts, and other collateral distribution to customers, as well as information provided on websites hosted by local governments and/or private collection service providers. The most active private collection service providers in Washington State often use education and outreach materials that are somewhat standardized across jurisdictions they serve, but materials are customized to align with the specific list of accepted materials, cart colors, and other unique variations of each jurisdiction's program.

Some local governments, either directly or through their contracted private collection service providers, do much more – from community events, presentations, and direct outreach to public service announcements and other periodic media campaigns. The nature and extent of education and outreach offered varies widely from jurisdiction to jurisdiction across the state.

4.2 Recycling Collection under EPR Policy

4.2.1 Access to recycling collection service

Under the policy framework (Chapter 1), producers would be responsible for ensuring that all residents throughout Washington State receive convenient, equitable recycling service in accordance with statewide collection service requirements established as part of the policy.

For illustration purposes, a model EPR system could be required to provide recycling service as follows:

- All residents with existing single-family curbside or multifamily recycling collection would continue to receive service, although some aspects of the existing service (the list of materials collected, frequency of collection; set out requirements, etc.) might change to align with uniform statewide collection requirements.
- Single family residents with curbside garbage service who had opted out of optional subscription-based recycling collection would begin to receive recycling service at no additional cost.
- Residents in rural areas without curbside garbage service would gain access to a more extensive network of drop-off collection locations.
- Multifamily residents who were excluded from recycling collection under the existing system, because it was not required and their property manager did not subscribe to service, would gain access to recycling services at levels in line with best practices.

[34] WasteDive, "How recycling has changed in all 50 states: Washington", Updated on November 15, 2019. Available online at https://www.wastedive.com/news/what-chinese-import-policies-mean-for-all-50-states/510751/.

- All residents would have access, via an extensive drop-off collection system, to recycle materials determined to be problematic in curbside collection program (such as flexible plastic packaging, expanded polystyrene foam, and—in some areas—glass).
- All residents would receive regular education and outreach about available services and proper participation. Communications would promote plain language and culturally relevant language, and would be provided in languages spoken by residents with limited English proficiency.

4.2.2 Recycling collection service providers

Under the policy framework, even though producers would be responsible for ensuring that collection service is available to residents in accordance with statewide collection service requirements, local governments would still retain their authority to provide residential recycling collection service if they choose to do so.

How service is provided in unincorporated areas would be determined by the EPR policy, potentially through changes to existing regulations. The policy could either exempt residential recycling collection provided under an EPR system from WUTC regulation or simply require that producers pay for residential collection under the existing WUTC regulatory framework.

A conceptual model and possible scenarios for the roles and responsibilities of collection service providers under the policy framework are described below.

Cities

Under the conceptual model, Cities would have several options for how to interface with the producer-funded system and would be able to choose the option that works best for their circumstances. Possible options might include:

- **Act as contracted service provider to the PRO:** Cities could continue providing residential recycling collection service, either via a contract or their own municipal crew, but align the service with statewide collection service requirements to minimize contamination. Under this option, cities would enter into contracts with the PRO and would receive payment to offset collection and education costs. Cities would then choose whether to return the payments to ratepayers directly via bill rebates or use the funds to expand or subsidize other services (e.g. organics collection, bulky waste collection, etc.).

Recycle BC Minimum Service Standards

The Recycle BC 2019 Stewardship Plan for PPP includes the following minimum service standards:

- Maintain curbside/multifamily recycling collection service for all residents in jurisdictions that choose to participate in the Recycle BC program and that had curbside/multifamily recycling service prior to May 2014 (when Recycle BC program began), with minimum collection frequency of every other week.
- Provide curbside recycling collection to residents that did not previously have the service, provided that curbside garbage collection has been in place for a minimum of two years and the community has a minimum population of 5,000 residents.
- Drop-off locations for collection of recyclable PPP from residents without curbside service and for collection of materials determined to be problematic in curbside collection programs from all residents. Drop-off locations are designed to be available within a 30-minute drive for all urban residents, and within 45-minute drive for all rural residents.

Recycle BC is required to revisit its service standards every five years as part of the stewardship plan approval process overseen by the BC Ministry of Environment & Climate Change Strategy. The Ministry may require increased service standards in future plans if it believes Recycle BC is not fulfilling its obligations or is failing to meet its performance standards.

- **Transfer collection operations to the PRO:** Alternatively, Cities could choose to have the PRO provide the collection service. The PRO would be directly responsible for contracting with a private collection service provider to provide recycling collection in accordance with state collection service requirements. The PRO would be responsible for all transition costs and for managing the transition. For example, this option might involve the PRO purchasing assets (e.g. carts) from a city government if it owned existing carts. The PRO would be responsible for education and administration related to residential recycling. Under this option, city governments would no longer be directly involved in recycling collection (and would not charge residents for it) but could continue to provide special recycling services (such as for electronics, batteries, textiles, appliances, etc.) and would retain responsibility for providing garbage and organics collection.
- **Opt out of producer funding:** Cities could also choose to opt out of a producer-funded system entirely and continue to provide residential recycling without financial support from producers. Under this scenario, cities would still be required to meet the minimum collection service requirements established as part of the policy framework.

In either of the first two options, collection and sorting services would likely be split into separate contracts and no longer provided as bundled services as they are often offered under the existing system. Instead, collection service providers would be required to deliver collected recyclable materials to sorting facilities operating under the EPR system (the conceptual model for post-collection sorting and marketing is described in Chapter 5, Post-Collection Sorting and Marketing). Cities would be responsible for renegotiating their existing service contracts as needed to align with the new statewide service requirements as well as any additional contract requirements of the EPR system.

The specific options available to Cities and the details of how service relationships and payments would be structured would be determined after adoption of the policy framework as part of the required consultations between the PRO and local governments.

Counties

Under the policy framework, county governments would also retain their authority to provide residential recycling collection as under the existing system, either under contracts for curbside collection or via operation of drop-off locations, if they desire.

Counties that contract for curbside recycling would have the same options as those described for cities and those that operate drop-off collection locations would have similar options related to drop-off collection.

If they chose to act as contracted collectors, county governments would enter into contracts with the PRO and receive payments for providing this service. Alternatively, county governments could choose not to act as drop-off collection operators, in which case producers would need to establish other drop-off locations as needed to meet the state collection requirements.

Regardless of the role they choose to play in collection service, county governments would no longer be responsible for standard-setting and planning for residential recycling of packaging and paper, as uniform statewide collection service requirements would be set through state law.

Private Recycling Service Providers

Under this conceptual model, private collection service providers that collect recyclable materials would continue to provide residential recycling collection throughout the state, under similar arrangements as

the existing system or through service contracted directly by the PRO. And, as a result of the adoption of statewide minimum service requirements expanding residential recycling service access, private collection service providers might also have to opportunity to receive contracts to provide services in new areas and/or to additional residential customers in areas where service expansion is required to achieve statewide service requirements.

For private recycling service providers currently operating under contracts with local governments:

- Depending on local government discretion, collection service providers would continue to provide contracted collection services, with contract terms modified as needed to adapt to new state requirements.
- If a local government with contracted service in the existing system decided not to continue as a service provider for residential recycling, private collection service providers could bid on contracts for residential recycling collection managed directly by the PRO.

In WUTC-regulated areas, the role of private recycling collection service providers would be determined by the EPR policy and potentially through changes to existing regulations. Current state law requires that residential recycling in Washington State be collected by the designated G-certificate collection service provider except for when collected by a city or by a private collection service provider operating under contract with a city or county (RCW 81.77.130). The EPR policy could either extend the exemption to exclude residential recycling collection provided under an EPR system from WUTC regulation or simply require that producers pay for residential collection under the existing WUTC regulatory framework.

For private recycling service providers currently operating under G-certificates in WUTC-regulated areas:

- If residential recycling collection provided under an EPR system was included in the exemption from WUTC regulation (this exemption already exists for residential recycling collected by local governments or their contracted service providers), then G-certificate collection service providers would not provide residential recycling under the WUTC-regulated system but could bid on contracts for residential recycling collection managed directly by the PRO. (Other waste collection services under WUTC regulation would not be changed.)
- If residential recycling collection provided under an EPR system was not exempted from WUTC regulation, then G-certificate collection service providers would still be required to provide residential recycling service in accordance with the statewide service requirements adopted as part of the EPR policy but would receive payment for the service from the PRO rather than from ratepayers.

For private recycling service providers that currently operate specialty collection locations, such as drop-off services paired with recycled goods retail stores, or specialty recyclers with physical locations such as electronics recyclers or building salvage and reuse stores, an EPR system implemented under the policy framework could present opportunities to expand service offerings and/or locations as contracted service providers for the PRO as part of the required drop-off collection network.

Residential Recycling Collection in BC

As an example of how collection responsibilities have evolved over time in a full EPR system, Recycle BC, the primary PRO for residential PPP in British Columbia, offered municipalities the right of first refusal for curbside collection service, with three options – "opt in, transfer, opt out":

- Opt in to become a contracted collector for the program by signing a master service agreement with Recycle BC. This allows a municipality to maintain control over curbside collection (whether they provide it themselves or subcontract with private collection service providers) and receive a per household incentive payment to cover their costs, as well as an administration and education and outreach incentive. The vast majority of municipalities, covering approximately two thirds of the provincial population, currently operate under this arrangement.
- Transfer responsibility for collection, sorting, and marketing of residential recyclables to Recycle BC, who contracts directly with collection service providers to provide service. Thirteen municipalities covering approximately one third of the provincial population, including Vancouver, have chosen this arrangement, and more communities are shifting to this option in the coming year.
- Opt out of the EPR system entirely, maintaining control and responsibility for recycling collection, sorting, and marketing. Several municipalities who initially opted out have since joined the system, with the last large municipality joining in Summer 2020.

Contracted Collector Municipalities: All municipalities that have chosen to act as contracted collectors with Recycle BC have the same master service agreement, with a few exceptions to accommodate differences across municipalities related to insurance and service disruption notice for those with unionized staff. Municipalities that continued to subcontract with private collection service providers were responsible for adjusting their contracts to align with the terms set forth in the master service agreement with Recycle BC. They also agreed to adjust charges to residents to account for the incentive payments received from Recycle BC. Some municipalities do this through bill credits or tax refunds to residents. Others use the payments from Recycle BC to offset the costs of other services provided to residents, such as curbside organics collection. If collection costs exceed the per household incentive payment from Recycle BC, the municipality can choose to collect the difference from residents.

Recycle BC commissions regular cost studies conducted by an independent financial accounting firm to assist in determining the per household incentive payment for collection and offers a standard market clearing price to all contracted collectors, with adjustment factors for housing density (households per hectare) and collection format (single stream or multi-stream). Municipalities receive higher incentive payments for dual-stream collection, as it results in cleaner material and therefore lower sorting costs.

Contracts expire every five years, giving municipalities regular intervals to reconsider their collection approach. Municipalities that wish to transfer service directly to Recycle BC must provide 18-month notice prior to their contract expiry date.

Drop-off Depots: Recycle BC also has a drop-off collection system of 215 private, nonprofit, First Nations, and local government depots. Some of these depots existed prior to Recycle BC and now contract with them, while others are new facilities. The drop-off depots are staffed and fully segregate materials to maintain low contamination. They also accept materials like foam, plastic bags, overwrap, and other flexible plastic packaging not accepted in the curbside program.

4.2.3. Harmonized materials

One of the central elements of the EPR policy framework is the adoption of a uniform, comprehensive list of recyclable packaging and paper that must be collected from residents statewide.

The purpose of harmonizing the list of materials to be collected is threefold:

1) It ensures equitable service for all residents in the state,
2) It makes it possible to have harmonized messaging and education statewide, reducing resident confusion and amplifying the power of education campaigns, and
3) It increases the amount and types of packaging and paper recovered, creating economies of scale, and enhancing the feasibility and cost-effectiveness of recycling efforts for materials that are less prevalent or more challenging to recycle, such as non-bottle rigid plastic containers, aseptic/polycoated cartons, polystyrene foam, plastic film and other flexible plastic packaging.

Under the policy framework, the state would establish a uniform list of materials required to be collected from residents. The list could be based on what can be recycled with existing sorting technology and infrastructure but should be structured so that it could be easily updated over time. Materials could be added (or removed) as sorting technology, market conditions, and packaging trends evolve. Producers would have discretion to determine how to collect these materials (via curbside or drop-off collection) but would be required to collect all materials listed from residents statewide.

Accepted Materials in British Columbia

The Recycle BC program in Canada includes a comprehensive, harmonized accepted materials list for residents across the province. This materials list has been expanded over time to include additional materials. For example, the "other flexible plastic packaging" category was added in June 2018. Recycle BC maintains a current list of accepted materials on their website. Communication about how to prepare materials is customized for municipalities as needed, depending on the collection method used. The figure below shows an example resident recycling guide for municipalities that provide multi-stream collection. Municipalities serving as contracted collectors can co-brand and/or customize such guides if desired.

4.2.4. Education and outreach

A consistent, professional statewide education and outreach campaign that reaches *all* residents is a fundamental element of a statewide producer-funded residential recycling system. Producers' investments in education and outreach campaigns are essential for increasing participation, reducing contamination, and achieving mandated material-specific recycling rates.

Under the conceptual model, education materials would be developed by the PRO to have a consistent "look and feel" but could be distributed by local governments if desired, such as the recycling guide shown above. Local governments could continue to provide the interface with local residents (as they would still retain responsibility for other waste streams) and would be compensated by producers for this additional service, according to mutually agreeable terms, where provided.

Reducing Contamination through EPR in British Columbia

Because producers are fully responsible for recycling system costs and outcomes under the PPP EPR policy in British Columbia, they are motivated to aggressively tackle the issue of contamination. As a result, the EPR system in BC has several mechanisms in place to address contamination throughout the recycling system, starting with resident education and key features of the collection system:

- The use of a harmonized material list reduces confusion about what can—and can't—be recycled.
- Clear, consistent communications to residents throughout the province ensures that everyone is properly educated about how to participate.
- Materials determined to be problematic in curbside collection program (flexible plastic packaging, expanded polystyrene foam, and glass) are not accepted in commingled curbside programs but residents are provided with convenient access to drop-off recycling locations so that they can continue to recycle these materials without creating challenges for sorting facilities handling curbside collected materials.
- Recycle BC works with its contracted post-collection network to conduct routine audits of incoming loads delivered by contracted collectors. The data from these audits is used to produce tailored "scorecards" for each municipality in the EPR system that provides feedback about contamination levels, including the presence of hazardous waste.
- Recycle BC works with municipalities found to have high levels of contamination to develop and implement contamination reduction strategies. If a municipality does not demonstrate a good-faith effort to reduce contamination after a warning, Recycle BC can reduce the municipality's incentive payment through a credit charge.

4.3 Transition Considerations for Recycling Collection

Any transition involves change and can require the redistribution of roles and responsibilities. A primary goal of the policy framework is to utilize the existing system infrastructure to the maximum extent possible while improving the environmental, social, and economic outcomes of the system. This can be accomplished through careful consideration of transition issues, by providing sufficient time for the transition to occur, and by ensuring adequate consultation of stakeholders in the design and implementation of the policy.

This section identifies some of the key transition issues and ways in which they might be addressed.

4.3.1 Current infrastructure and stranded assets related to collection of recyclable materials

The existing collection infrastructure is a combination of trucks, bins and other containers, drop-off facilities or consolidation points, including transfer stations and other publicly operated facilities. Significant investments have been made in the current collection infrastructure by both local governments and private sector collection service providers. Under the conceptual model, a 3-

to-5-year transition period would be provided following adoption of the policy, which would provide time for mandatory stakeholder consultations on how the transition should be handled and to ensure that existing assets are fairly considered to minimize losses and service disruptions, and to provide existing service providers adequate time to prepare for and adapt to the new system, including preparations for scaling up services to accommodate the expansion of residential recycling collection as needed to meet the new statewide service requirements and ensure all Washington State residents have convenient, equitable access to recycling.

4.3.2 Existing recycling collection contracts

The most significant transition issue related to collection would be addressing existing contracts between local governments and private collection service providers. As noted in Chapter 3, Costs and Financing Structure, research for this study involved review of more than 20 contracts issued by the largest Cities with contracted service in the state. Most of these contracts contain clauses that grant Cities authority to renegotiate contracts based on state policy changes. Several newer contracts explicitly state that the City reserves the right to engage in product stewardship that may result in one or more materials being removed from the collection service contract. So, the issue is not whether Cities may make such changes, but how and when to make changes to facilitate a smooth transition to an EPR system.

For local governments with service contracts that are expiring within the next 5 to 7 years, these transition considerations could be addressed pro-actively in the next round of contracting by issuing separate service contracts for collection services and for recycling sorting or, at a minimum, by requiring bidders to submit specific pricing for recycling collection and recycling sorting services, separate from garbage service and any other residential service elements to be covered in the contract. (Under the policy framework, contract elements addressing commercial recycling would be unaffected by the EPR system.)

For local governments with longer-term contracts, these issues would need to be renegotiated once a state EPR policy was passed. Coordination among local governments around these negotiations would be helpful for creating consistent term adjustments. Under the conceptual model, local governments would have 3 to 5 years to plan for and work through the transition.

4.3.3 Recycling collection service in unincorporated areas

The transition considerations for providing residential recycling collection in unincorporated areas under the conceptual model would depend on whether the EPR policy adopted extended the exemption for residential recycling collection from WUTC regulation for collection under an EPR system.

If the exemption was extended, an extensive consultation and procurement process would be needed to establish the terms and approach to collection services in areas currently under WUTC regulation. If the exemption was not extended, G-certificate collection service providers would need to develop plans and go through rate case reviews with the WUTC to establish reimbursement rates for service to all residents with garbage service in accordance with new statewide service requirements. Once approved, these rates would determine the payments to be made by the PRO to G-certificate service providers.

Either option would require planning for expansion of recycling collection operations in unincorporated areas to achieve statewide service requirements. All involved stakeholders would need to work together during the transition period to address asset concerns, provide seamless service to residents, and engage in outreach to residents to educate them about coming changes during the transition.

4.3.4 Impacts on residents during transition

The transition to an EPR system would undoubtedly have some impacts on Washington State residents. On the plus side, many residents would receive new or expanded curbside collection service and would gain access to recycling opportunities for more materials through drop-off locations. The transition to a harmonized list of materials and possible changes in collection methods (e.g. transition of some materials from curbside to drop-off, or glass included to glass separate) may cause some confusion initially. However, these changes can be managed through an intense period of education and outreach to explain the reasons for the changes, and the positive impacts on residents and local governments.

Chapter 5. Post-Collection Sorting and Marketing

5.1 Existing System Post-Collection Sorting and Marketing

In most residential recycling programs, private collection service providers are assigned the responsibility—and associated risks and rewards—for delivering materials to sorting facilities. These materials are then sent to loosely defined "recycling markets" under privately negotiated terms or are managed by facilities owned and operated by the collection service providers. Because of the private nature of these transactions, relatively little documentation is accessible about the flow of material and end markets for recyclable PPP collected from residents. The following section describes our best understanding of the existing system to sort and market recyclable materials and identifies remaining gaps in understanding where further research is needed.

5.1.1. Post-collection transfer and sorting of materials collected from residents

Most local governments with contracted collection service that includes recycling, recycling sorting and marketing decisions are linked to contracts for garbage collection, and pricing for all aspects of recycling (collection, sorting, marketing) is embedded within contract pricing for garbage service. (See Chapter 3, Costs and Financing Structure, for detailed discussion of service contracts and pricing.) In exchange, contracted collection service providers are granted full ownership of materials collected and associated risks, including responsibility for sorting and marketing of collected recyclable materials and rights to any revenues generated through their sale. Under the 20 collection contracts reviewed as part of this research effort, 17 included sorting as part of the recycling services covered by the contract.

A small number of local governments have separate contracts for sorting their recyclable materials collected at the curb. These are primarily jurisdictions that operate their own collection operations, such as the City of Olympia. A few cities, including the City of Seattle and the City of Walla Walla, issue separate contracts for collection and sorting. This research effort obtained and reviewed contracts for the cities of Seattle and Olympia, under which local governments pay contracted facilities for sorting on a per ton basis and receive market value credits for sorted and marketed materials. Additional research and review of sorting contracts, if able to be obtained, would provide greater clarity about the terms and drivers of these relationships.

Private collection service providers operating under WUTC regulation that provide residential recycling collection generally have discretion to decide which sorting facility to deliver materials to. However, Counties do have authority to direct residential recyclable materials collected within their jurisdiction to a specific publicly owned or contracted facility, if one exists. This authority is currently exercised by Clark County for both disposed and recyclable materials. This research did not identify any other Counties that currently utilize this authority to control the flow of recyclable materials.

WUTC regulation also requires that G-certificate collection service providers deliver residential recycling to facilities located within the county in which they are operating if one exists and if the facility can provide the required services at equal or lower cost compared to a facility outside of the county. Material delivery arrangements between G-certificate collection service providers and processers are often informal, based on facilities' spot pricing and acceptance standards. The specific receiving facilities and tons delivered from recycling collection in WUTC-regulated areas is not publicly reported. Extensive additional research would be required to map material flows from these areas.

Four companies in Washington State operate vertically integrated recycling services, covering both collection and sorting of residential recyclables. These companies hold 80% of the residential collection contracts that include recycling (77 of 96 identified) in the state (see Table 4 in Chapter 4.1.2). Consequently, most of the residential recycling collected under contracted service flows through the six material recovery facilities (MRFs) owned/operated by these companies (Waste Management, Republic Services, Waste Connections, and Recology Cleanscapes). Except for Recology Cleanscapes, which does not hold any G-certificates, these companies also serve the majority of WUTC-regulated areas with curbside recycling service.

The other major facility sorting commingled recycling in the state, Pioneer Recycling, does not do any collection. Instead, it receives materials from municipal collection service providers, from contracted collection service providers without their own sorting facilities, and from G-certificate collection service providers that either do not operate their own facilities (at all or at a convenient distance) or are required by WUTC regulation to use a local sorting facility.

Northwest Recycling, another major facility managing residential recycling in the state, receives materials only from the unique three-bin system in place throughout Whatcom County, collected by Sanitary Service Company and Nooksack Valley Disposal.

Several other collection service providers in the state have small sorting operations that handle basic separation or marketing of materials already separated by commodity during collection. Materials that are collected separately via drop-off at these locations are often sent directly to markets. Commingled materials that are collected by these service providers are generally transferred to one of the seven MRFs in the state that process commingled materials.

Of the nearly 1.2 million tons of recyclable PPP collected for recycling in Washington State in 2017, it is believed that at least two-thirds was processed at one of the eight facilities listed in Table 5 below.[35]

Table 5. Washington State Recycling Sorting Facilities involved in Residential Recycling

Sorting Facility (Owner)	City (County)	Total Capacity (TPY)	Throughput 2017 (TPY)	% of TPY Residential	Date Built/ Upgraded
JMK Fibers (WM)	Tacoma (Pierce)	156,000	133,030	70%	2013
Cascade Recycling Center (WM)	Woodinville (King)	144,000	123,613	83%	2003
SMaRT Center (WM)	Spokane (Spokane)	100,000	69,808	unknown	2012
3rd & Lander (Republic)	Seattle (King)	218,400	210,759	76%	1988
Pioneer Recycling Services	Tacoma (Pierce)	120,000	unknown	unknown	2006, 2014
Recology CleanScapes	Seattle (King)	90,000	68,918	100%	2014

[35] Estimated tons of PPP collected for recycling based on Department of Ecology, *Waste Generation and Recovery Data (2017),* available here: https://ecology.wa.gov/Research-Data/Data-resources/Solid-waste-recycling-data. Estimated recycling throughput of facilities based on data provide by Department of Ecology through a public records request. Some facility reports were redacted, so gaps in data remain.

West Van Material Recovery Center (Waste Connections)	Vancouver (Clark)	unknown	60,000	unknown	1992
Northwest Recycling (Parberry's Inc.)	Bellingham (Whatcom)	unknown	45,000	33%	1992 (upgraded)

5.1.2. Sorting technology, commodities produced

Under the current system, decisions about how to process commingled recyclables and what commodities to separate and sell are generally made by MRF operators in response to:

1) the material mix delivered to their facilities, influenced by the mix of packaging and paper materials available to consumers, consumer behavior around contamination, and by the list of materials required by local jurisdictions to be collected for recycling; and,
2) the market signals around demand and pricing for given commodities relative to the cost and feasibility of producing those commodities.

Most MRFs produce a similar list of commodities from residential recyclables, which includes some materials that are segregated down to a single material type (e.g., aluminum cans, HDPE natural bottles) while others are shipped to buyers in a much less processed state (e.g., mixed rigid plastics). Some materials that could be segregated as separate commodities are not currently sorted as such (e.g., aseptic/polycoated cartons, #5 PP rigid plastics, newspaper). This is generally due the cost of separation relative to the market value of the material, influenced by the volume and quality of the material in the mix, and whether it can be marketed in a lower-cost condition.

For many years, the strong market demand for mixed paper bales with loose contamination limits and for mixed rigid plastics bales meant that MRF operators did not need to invest in additional sorting equipment or staff to separate these materials into more refined commodity types.

Until recently, high commodity values for corrugated cardboard and mixed paper, which make up largest volume of the incoming mix, helped to offset the costs of managing an increasingly complex and contaminated stream. However, market values of these materials have plummeted in the past two year. According to one recent report, the average value per ton of residential recyclables has dropped by 66%, from an average of $90 per ton in July 2017 to $30 per ton in October 2019.[36] In addition to the dramatic declines in commodity values for paper and plastics, the value of an average ton of residential recyclables is also diminishing due to light weighting and shifts in the packaging mix away from higher-value materials and toward flexible plastic packaging.

The changing landscape of markets and materials is now forcing sorting facilities to reassess how to process and what commodities they can sell. Sorting will likely become increasingly expensive, with more high-tech equipment needed to produce clean, separated, quality materials for sale. In addition, costs for transport and disposal of residuals continue to increase, and less high-value materials are entering the recycling stream.

Without a fundamental change to the structure of the recycling system, these trends will either require that less material is recovered or that local jurisdictions and their residents pay more to have their recycling processed. Even with additional costs transferred to residents, the current sorting system likely

[36] The Recycling Partnership, *2020 State of Curbside Recycling Report,* February 2020. Available online at https://recyclingpartnership.org/stateofcurbside/.

does not achieve the economies of scale required to cost-effective process some of the less prevalent or less readily-recyclable PPP materials.

5.1.3. Material marketing and end markets

While many contracts specify that materials collected for recycling may not be disposed except with express authorization from the municipality, relatively few require verifiable end market documentation. This means that little is known about the "end markets" for residential recyclables collected in Washington State. Even under contracts with comparatively prescriptive reporting requirements, local jurisdictions report that, while they are advised of the international and domestic market areas into which recyclables are sold, they are not provided with specific information on the buyers and cannot determine if the recyclable commodities sold are actually being recycled in to new goods or what percentage of each commodity type collected is actually being recycled versus discarded.

At the state level, limited reporting on end markets is currently required. It is not possible to reliably ascertain where recyclable materials collected in Washington State are sent or to map material flows by sector or by individual commodity type. The total amount of recyclable PPP collected actually utilized in new production is also unknown.

5.2 Post-Collection Sorting and Marketing under EPR Policy

Under the EPR policy framework, producers would be responsible for managing the sorting and marketing of the residential recycling collected through the channels described in Chapter 4.2, Model EPR System – Recycling Collection. As with collection, sorting and marketing could be restructured in a number of different ways to increase system efficiencies, improve bale qualities, and effectively capture and deliver more recyclable materials to reprocessors and end markets. The post-collection system under an EPR policy would be shaped by the existing sorting infrastructure already in place in the state as well as the additional infrastructure determined to be needed to fill gaps in service and meet the material-specific recycling requirements established through the policy.

5.2.1. Contracts for post-collection transfer and sorting

In the conceptual model system developed in response to adoption of the EPR policy framework, it is anticipated that the PRO formed to carry out producers' obligations and manage the reverse supply chain for PPP would enter into contracts for sorting with existing sorting facilities to the extent possible. Working with existing sorting facilities would be beneficial for producers because it would minimize the capital outlays required to manage the quantities of material already flowing through residential recycling collection channels and growing over time to meet mandated material-specific recycling rates.

The PRO would be expected to prioritize material quality, maximum PPP recovery, and system efficiency in awarding contracts. It is expected that Requests for Proposals (RFPs) for post-collection services would enable existing sorting facilities to bid on contracts individually or in collaboration, proposing creative methods for enhancing efficiencies and optimizing material recovery. Sorting contracts could also cover post-collection transfer and transport to move collected materials from collection delivery locations to sorting locations. Alternatively, these services might be covered under separate transportation contracts.

In a producer-funded EPR system, all residential recycling collected through producer-funded programs would be delivered to facilities operating under contracts with the associated PRO. Under these contracts, sorting facilities would likely charge on a gross per ton basis according to the terms

negotiated in their contract with the PRO. Terms would likely specify the preparation of collected materials for recycling, meaning materials would be sorted to an acceptable level of quality, baled or otherwise separated into a marketable commodity that could be further processed by a reprocessor or used directly by an end-market as a feedstock in a new product.

The resulting sorting network funded by producers could be structured in numerous different ways. One option might be to divide the state into regional service zones, with multiple contracts awarded to different facility operators for various levels of sorting or various types of materials handled. For example, numerous regional facilities with less sophisticated equipment could minimally separate paper and cardboard for sale to regional markets, while containers, or even just plastics, could be baled together and sent to a centralized facility for secondary sorting into specific commodity types.

5.2.2. Investments in sorting infrastructure and technology to enable more/better sorting

In order to meet their obligations described in the policy framework, it is anticipated that producers would need to make additional investments in sorting infrastructure and technology. Potential areas of investment include:

- **Infrastructure and/or technology to effectively separate materials not optimally recovered in the current system** or **to improve quality of recovered materials**, as required to meet material-specific recycling rate requirements and to produce marketable commodities capable of being used as recycled content feedstocks.
- *This type of investment could be substantial – from funding for new sortation equipment at existing facilities to development of a new secondary sorting facility.*
- **Additional transfer, consolidation, and sorting locations** needed to enhance the efficiency of the post-collection transfer and consolidation network statewide.
- *This type of investment could be provided to existing sorting facility operators to expand or invest in facility upgrades as needed to serve in new/additional roles under the producer-funded statewide network.*
- **Additional equipment** needed at drop-off locations or transfer facilities as needed to consolidate, densify, or otherwise optimize efficient transport of voluminous, lightweight materials such as balers, densifiers for low-grade rigid plastics, polystyrene foam, and plastic film.
- *This type of investment could enable more cost-effective and environmentally responsible management of materials currently not recovered in many parts of the state.*

Depending on the timeline for development and implementation set for transitioning to a producer-funded system, scenarios for sorting residential PPP under an EPR system could initially appear to operate with largely the same infrastructure as the current system but may be expanded, consolidated, or re-structured over time. Sorting facilities operating under the existing system could respond in ways that best align with their business plans. They could choose to continue in similar roles, expand their service offerings to provide additional levels or types of sorting, or could specialize to focus more or less on residential PPP. (Recycling of commercial sector materials, under the policy framework, would continue to operate as it currently does, outside of an EPR system).

Development of Integrated Provincewide Sorting Systems for Residential PPP in British Columbia

In British Columbia, the primary PRO for PPP materials—Recycle BC—is responsible for managing the reverse supply chain for residential PPP, including post-collection transfer, sorting, and material marketing services and costs. Recycle BC oversees this system on behalf of its members and, through contractual relationships, a quantity of specific PPP materials for two other PROs representing other PPP producers in BC.

From the start, Recycle BC set out to develop an integrated, province-wide network for managing residential PPP in accordance with its regulated obligations, seeking efficiencies and economies of scale where possible. However, the province-wide system that emerged from the competitive procurement process, which is operated by a single consortium, was something of a surprise and came about through the creativity and collaboration of many of the province's existing sorting facility operators and other existing recycling system players.

Through a long and public process, Recycle BC first issued a Request for Expressions of Interest (REOI) from qualified companies, then a formal Request for Proposals (RFP) from private sector service providers to provide full "post collection" services, which includes:

- Receiving PPP from residential collection vehicles;
- Picking up PPP from depots, with consolidation and transfer where required;
- Handling and sorting PPP;
- Preparing PPP for shipment to end-markets or downstream reprocessors;
- Marketing PPP to maximize commodity revenue, appropriately managing residuals and reporting the quantity of material received and marketed.

For RFP purposes, the province was divided into 10 zones along logical geographical boundaries. Interested parties were invited to respond on services for one, more than one, or all zones, with the only caveat that if firms submitted for several zones, they had to also respond to zones individually. This was done to allow small local companies to participate on a single zone and be fairly evaluated against larger respondents on a zone-by-zone basis.

In the end, a consortium involving many local players was awarded a 4-year contract to operate post-collection services for all zones in the province, which was not the inevitable outcome. The consortium selected was Green By Nature (GBN), a partnership between two otherwise competing sorting facility operators—Emterra Environmental and Cascades Recovery—and a local recycled plastics reclaimer, Merlin Plastics. In addition to the three primary partners, the GBN consortium also included more than 25 other regional facility operators (representing 45 facilities) acting as subcontractors, with letters of commitment from these facilities submitted as part of the RFP response.

In addition to the extensive coverage and collaboration offered by the successful respondent, the central feature of the selected proposal offered development of an additional $20 million container recovery facility (CRF), which provided the capacity for centralized sorting of all mixed containers collected throughout the province and recovery of lightweight and otherwise difficult-to-recover material types, such as expanded grades of rigid plastics, cartons and paper cups, as well as consolidation of foam and film collected from drop-off locations.

With the exception of the new CRF, all of the facilities that now serve as components of the provincewide post-collection and sorting network were existing facilities; many were owned by small, local companies; some are public transfer stations.

As of December 2019, the residential recycling sorting system in BC is made up of:

- 32 Receiving, Consolidation and Transfer (RCT) Facilities – most of these facilities (scattered in locations across the province) operated through sub-contracts with local existing recyclable materials transfer and sorting companies. GBN is required to provide an RCT facility within a specified drive time and/or kilometers of each contracted collector, unless separate arrangements are made by GBN to compensate the collector for an additional driving distance.
- 11 Pre-Conditioning Facilities (PCFs) – another important distinguishing feature of the BC system is that these 11 local "pre-conditioning" facilities are primarily responsible for receiving the collected fiber and container materials, separating out the container fraction for further sorting at the CRF, and baling/sending the fiber materials to market directly. This approach is both logistically and financially efficient in that it both optimizes the fiber sorting skill and capacity of each conditioning facility, while eliminating the need for the investment in expensive container sorting technologies in each facility across the province.
- 1 Container Recovery Facility (CRF) – A key to the success of the BC supply chain for PPP is its Container Sorting Facility located in Metro Vancouver to process container materials (especially plastics) collected across the province. This state-of-the-art facility is specifically designed to effectively sort the "three-dimensional" portion of residential PPP materials. The plastic commodities produced by this facility are specifically designed to meet the requirements of its end market, Merlin Plastics – one of the largest reprocessors of post-consumer plastics in North America – which ensures that recovered plastics can become recycled content feedstock in new manufacturing.

Materials flowing through the GBN post-collection network are extensively tracked and monitored, creating a comprehensive chain-of-custody record in Recycle BC's data system for use in compensation calculations and to report on tons recovered by material as well as account for materials collected but not ultimately sent to recycling or recovery end markets. GBN and Recycle BC work together on routine audits of incoming loads from collectors to monitor material composition and quality, which is then used to provide regular feedback to municipalities about contamination levels and to inform resident education efforts around proper recycling participation.

Recycle BC recently went through its second procurement process for post-collection services for the next term. The RFP was issued following extensive market research and consultation with sorting facility operators throughout North America, and included several adjustments to required services in response to changing market dynamics and with a focus on developing local end markets for paper while maintaining a commitment to system efficiencies and clear and transparent business processes. The selected contractor will begin operations of the Recycle BC post-collection network in May 2020 and will be leveraging existing receiving facilities throughout the province, resulting in continued participation of small operators in the program's post-collection system.

5.2.3. Material marketing and transparency in end markets, utilization of collected materials

A central element of the EPR policy framework is that the obligated producers are responsible for securing end markets and the risks associated with commodity price fluctuations for recyclable PPP. This transfer of risk would insulate residential recycling collection and sorting systems from the financial strains of market volatility and would create incentives for producers to ensure that PPP materials sold to residential consumers can be effectively processed and have reliable end markets.

Under the conceptual model, sorting facilities operating under contracts with the PRO might also provide commodity marketing services, with material revenues returned to producers under a mutually agreeable arrangement. Alternatively, the PRO could choose to undertake material marketing directly.

If sorting facilities did provide marketing services, they would be required to provide verifiable documentation showing that residential PPP commodities were delivered to reprocessors or end users operating with appropriate protection of human health and the environment that is equivalent to or greater than Washington State laws. Depending on the contract terms, the PRO might stipulate that they must pre-approve end markets. Another option would be to offer their producer members the right of first refusal on commodity purchases to enable producers to access materials needed to meet the new recycled content requirements described in the policy framework and in Chapter 7, Recycled Content Requirements. Under this scenario, the direct connection between packaging producers and recycling system operations would facilitate the management of PPP using circular economy principles and create the potential for closed loop recycling of PPP unmatched by other policy approaches.

Under the policy framework, producers would also be ultimately responsible for verification of claims made about the material-specific recycling rates reported, which would be based on tons reported as delivered to reprocessors or end market users. The veracity of those claims would be reviewed by the regulatory authority responsible for enforcing the adopted policy (Chapter 8, Compliance Monitoring and Enforcement), which could issue penalties to producers if claims did not meet standards of reasonable assurance.

Marketing of Recyclables and End Market Transparency in British Columbia

In British Columbia, the PPP EPR program operated by Recycle BC (the PRO), contracts with Green By Nature (GBN) to market the residential recyclables collected across the province on behalf of Recycle BC.

The revenue generated by the sale of commodities from the program is returned to Recycle BC according to a commodity revenue rebate calculation that is included in contract. The formula uses data on tonnage per commodity that is collected via audits of incoming loads of recyclable materials at each receiving facility. Approximately 1,800 audits are conducted annually. The audits determine tonnage that can be attributed to the Recycle BC program and they also provide a means of documenting contamination levels on an ongoing basis.

For each commodity, the tons are multiplied by the established market price index for that commodity. This is the amount that is returned to the PRO. If the post-collection contractor is able to secure higher prices than the index price, they are entitled to keep that amount. This approach allows sorting facilities to maintain confidentiality around the prices paid for specific amounts purchased by specific buyers, and it provides an opportunity for the post-collection contractor to realize additional profits.

Recycle BC requires that GBN provide full chain of custody documentation through to end market. Recycle BC pre-authorizes every end market before materials can be transferred and end markets in countries that are members of the Organization of Economic Cooperation and Development (OECD) are prioritized. Marketing of PPP to buyers in non-OECD countries is authorized only if the buyers are shown meet or exceed the environment, health and safety standards equivalent to OECD standards, verified through direct review of ISO and health certifications. As appropriate, onsite audits of receiving reprocessing facilities are also conducted by Recycle BC, such as the Chinese manufacturing facility that is the end user for polystyrene foam.

Despite tightening world commodity markets, the Recycle BC program has successfully ensured that over 87% of all residential material collected is recycled. This is in large part due to the high quality of material produced by the BC system and investments in infrastructure.

Current end markets for residential recyclables collected through the BC system include:

- **Paper:** Corrugated cardboard from the BC program is sold to paper mills in BC. Paper is sold to mills in Canada and the U.S. as well as overseas. BC used to send most of its paper to China but stopped on

January 1, 2018. Even with challenging global markets, Recycle BC reports that the province has one of lowest contamination rates in North America and has been able to find paper markets in India, Indonesia, South Korea, and Taiwan.

- **Metal:** Metal containers are sold to markets in BC, Ontario, and the U.S., where they can be made into new packaging or sheet metal.
- **Glass:** Container glass collected via drop-off locations from BC households is shipped to Abbotsford, BC to be processed into new bottles. Glass that is dirty is sent to Quesnel, BC where it is made into sandblast material. Recycle BC is currently doing a GHG analysis to determine what is the longest distance glass should be moved for each end market option from a net GHG emissions standpoint.
- **Plastics**: Most plastics (containers, PE plastic bags and film) are transferred as commodities to the reprocessor Merlin Plastics in Metro Vancouver, which turns them into pellets and flakes that are sold mainly to local plastics industry end users. Other flexible plastic packaging becomes engineered fuel. Only polystyrene foam, representing less than 1% of residential plastics that are collected in BC, is sent overseas – to a Chinese-run company in Malaysia that uses it to make picture frames.

Glass and cartons are noted as the most persistently challenging commodities to market. In the absence of a viable recycling end market, other flexible plastic packaging is currently marketed and recovered as an engineered fuel rather than as a recyclable commodity. In 2018, 3% of Recycle BC's collected material was recovered as engineered fuel.

5.3 Transition Considerations for Sorting and Markets

5.3.1 Transition issues around transfer and sorting facilities, including stranded assets

Stranded assets often refer to transfer and sorting facilities which may not be utilized in a producer-funded system. In order to meet the recycling rate requirements established in the policy, it is anticipated that the system would require the throughput capacity of all existing sorting facilities in the state to manage the quantity of residential PPP already flowing through the system plus the additional quantities collected due to expansion of service access and resident participation under an EPR system. This suggests that all existing sorting facilities could continue to play a role in residential recycling sorting under an EPR system. Nonetheless, decisions about whether or how to participate in the producer-funded network would be subject to business decisions and negotiations among private parties. It is unknown at this time which facilities would participate and how, as design and development of the sorting network for residential PPP is anticipated to occur over time through consultations and negotiations between and among sorting facilities and producers, without direct state intervention.

5.3.2 Transition issues around existing contracts, integrated contracts

Under the conceptual model, to participate in and benefit from the producer-funded sorting network—and from the transparency and system efficiencies of an EPR system approach—Cities would need to direct their contracted collection service providers to deliver collected materials to facilities that are operating under agreements with producers. This means that Cities with existing contracts where recycling collection and sorting are integrated, which is the case for most contracts currently in place, would need to make changes to their contracts to remove the transfer of ownership of collected recyclables and adjust the terms around where and how collected recyclables are sorted. As noted in Chapter 4.3, Transition Considerations for Recycling Collection, most of the contracts that were reviewed for this research include clauses that grant cities the right to renegotiate based on policy changes. The policy framework would be structured to provide cities with authority and sufficient time

to work with contractors and adjust contract terms as needed. Cities that plan on issuing new contracts in anticipation of an EPR policy in Washington State could facilitate a smoother transition by issuing separate contracts for collection and recycling sorting.

5.3.3 Transition issues around sorting of collected materials in unincorporated areas

If residential recycling collection is not exempted from WUTC regulation and G-certificate collection service providers were to continue providing residential recycling collection under WUTC regulatory oversight, additional clauses might be required in policy to explicitly direct G-certificate collection service providers to deliver recyclables collected from residents to facilities operating under agreements with producers. Assuming that producers would be paying the UTC-approved rates to G-certificate collection service providers for these services, this requirement would not be expected to affect collection service provider revenues. Residents' costs would be lower, however, as they would no longer be paying for recycling collection service.

Chapter 6. Recycling Rate Requirements

6.1 Existing System Recycling Rates

The Washington State Legislature has established a waste management hierarchy that provides the framework for waste prevention and resource recovery. Local governments are required to prioritize and plan for waste reduction and recycling, with source separation of recyclable materials as the preferred method of management (RCW 70.95.008).

Washington State's law (RCW 70.95.010(9)) also established a goal of achieving a 50 percent recycling rate by 2007. This recycling rate goal is meant to be the rate of recycling achieved out of all recoverable municipal solid waste (including organics, not just standard residential curbside recyclable material or packaging).

There is no mandate that each county or city adopt the 50 percent goal. However, each community is encouraged to set a goal or adopt a qualitative plan for supporting the waste management hierarchy that suits its own situation, and the goal or plan is based on justified and sound reasoning. There is no mechanism for ensuring that the actions of individual counties and cities will add up sufficiently to achieve the state's goal.

Despite having a recycling rate goal set in state law, the Department of Ecology does not calculate an official recycling rate (defined as tons of material delivered to reprocessors or end markets). Rather, the state reports more broadly on the recycling rate, which includes recycling and other forms of recovery such as wastes burned for energy.

The Department of Ecology recently published updated data on waste generation, quantities recovered, and recycling rate calculations for the years 2000 – 2017. According to the new data, the statewide recycling rate peaked in 2011 at 56.6 percent and has subsequently dropped to 48.5 percent as of 2017. Meanwhile, after dropping for several years following the 2008 recession, the amount of solid waste generated per person in Washington State has nearly returned to pre-recession levels.

Because there is no required reporting of the amount of packaging sold into the state, there is no tracking or estimation done for the recycling rate of packaging or for residential recyclables overall. Additional in-depth data gathering and analysis would be required to estimate the amount of packaging and paper products generated and the specific recycling rate of these materials under the existing system. Moreover, current limitations related to consistency and transparency in reported data make it challenging to know whether the tons reported as recycled are actually recycled into materials that can be made into new products or have been recycled in ways that protect human health and the environment.

6.2 Recycling Rate Requirements under EPR Policy

A comprehensive, statewide EPR policy would set material-specific minimum net recycling rate requirements for covered PPP and associated timelines for achieving them. The requirements would be set on a material-specific basis to drive collection and recycling of all PPP material types, not just those that contribute the greatest tons toward an overall recycling rate calculation. The initial requirements would be informed by data on current recycling rates and set at ambitious but achievable levels. Under the EPR policy, there would be a method established for regular evaluation and updating of requirements in the future as needed.

The requirements would be set as a "net recycling rate" for each material type. This is defined as annual net tons reported recycled (delivered to reprocessors or end-markets) by material, not including contaminants, divided by the total verified annual quantity of material sold into the state.

To comply with requirements of the EPR policy, the PRO would be responsible for tracking all material flows on behalf of their members. The PRO would report annually to the regulatory authority on the recycling rates achieved for the packaging and paper products sold into the market that year. In order to claim tons as recycled, the PRO would need to be able to provide verifiable documentation that they were delivered to an end-market consumer.

Material-Specific Recycling Rate Standards Adopted in the EU and British Columbia

The European Union's Circular Economy Package (CEP) was passed in May 2018. All EU member states will be required to have EPR in place for all packaging by 2024. National legislation translating CEP into law must be in place by July 2020.[37] Under the CEP, EU member states must achieve the following recycling rates for packaging:

EU Recycling Targets

	2025	2030
Glass	70%	75%
Paper, boards, cartons	82%	85%
Ferrous metals	75%	80%
Aluminum	55%	60%
Plastics	50%	55%
Wood	30%	30%
All packaging	66%	70%

All calculations must be based on recycling tonnage, excluding contaminants. This will require reporting on tons sold to the final recycling facility, after all sorting has taken place. If this weight cannot be obtained because recycling occurred overseas or material was handled through third-party brokers, then member states must apply "average loss rates" (to be set by the European Commission) to incoming tons reported. The intent is to exclude contamination from the weight of recyclables reported.[38]

In Canada, BC became the first province to have material-specific recovery targets for packaging and paper products, including for rigid and flexible plastic subcategories. The 2019 Recycle BC Stewardship Plan included the following standards[39]:

[37] Cole, Rob. Resource Media. May 25, 2018. "EU member states give circular economy package seal of approval." https://resource.co/article/eu-member-states-give-circular-economy-package-seal-approval-12652.
[38] Morawski, Clarissa. Resource Recycling. January 23, 2018. "Dispatches from Europe: Big changes planned by the EU." https://resource-recycling.com/recycling/2018/01/23/dispatches-europe-big-changes-planned-eu/.
[39] "Recovery rate" in the Recycle BC program is defined as the quantity of PPP collected divided by the quantity of PPP sold into the province. Note that aseptic/gabletop cartons are included in Paper category for the Recycle BC program.

Material Category	2017 Recovery Rate	Target Recovery Rate	Year to Achieve Target
Paper	87%	90%	2020
Plastic	41%	50%	2025
Rigid Plastic	50%	55%	2022
		60%	2025
Flexible Plastic	20%	22%	2022
		25%	2025
Metal	66%	67%	2020
Glass	72%	75%	2020

The 2019 Recycle BC Stewardship Plan states: "These material-specific recovery targets are consistent with the European Union's targets, including plastic targets of 50% by 2025 and 55% by 2030, set as part of the efforts to transition to a circular economy. Similarly, they are consistent with the targets set in the Plastics Charter, recently tabled by Canada at the 2018 G7 meeting in Charlevoix, Quebec, (i.e., recycle and reuse 55% of plastic packaging by 2030 and recover 100% of all plastics by 2040)."[40]

The adoption of material-specific standards in an approved stewardship plan makes them enforceable requirements. If the targets are not met, the Ministry of the Environment could fine individual producers and the PRO up to $40,000 per day out of compliance.

GHG Tracking through EPR

In addition to tracking recycling performance, an EPR system could include other environmental performance metrics to drive progress. In 2019, Recycle BC began tracking GHG emissions performance and will begin reporting on it in 2020. If formal requirements related to GHG emissions are set in a future stewardship plan, these could also become enforceable performance standards alongside recovery rates.

6.3 Transition Considerations for Recycling Rate Requirements

As part of the transition to an EPR system, data would need to be collected from producers about packaging material types and quantities being sold into the state annually. There is currently no source of accurate data for this information; statewide waste characterization studies combined with reporting of tons handled by sorting facilities provide the closest proxy for material quantity estimates coming into Washington State. To support development of material-specific recycling rate requirements, the state would need to conduct additional analyses of this existing data and gather additional data to the extent feasible to estimate current material-specific recycling rates.

Once an EPR policy was in place, PRO would be required to report the amount of PPP their member producers sell into the state. This will further refine the recycling rate requirements as well as support other aspects of system design and compliance enforcement efforts.

[40] Recycle BC, June 2019, "Packaging and Paper Product Extended Producer Responsibility Plan," http://recyclebc.ca/wp-content/uploads/2019/07/RecycleBCStewardshipPlan_16July2019.pdf.

Chapter 7. Recycled Content Requirements

7.1 Recycled Content Requirements under Existing System

There are no laws in Washington State that require producers to use recycled content materials in their products or packaging. The State and several local governments have environmentally preferable procurement guidelines, some of which prioritize the purchase of recycled content products, but these apply only to procurement by the government agencies. Copy and printing paper is the only product where state agencies are required to purchase 100 percent recycled content products (RCW 43.19A.022).

Recycled Content Use Standards in the EU

In Europe, mandatory standards to drive recycled content use are increasingly being adopted. In 2018, the EU passed a 25 percent recycled content requirement for plastic beverage bottles that will go into effect in 2025, increasing to 30 percent by 2030.[41] The UK also announced its intent to impose a tax on plastic packaging that contains less than 30% recycled content, which will go into effect in 2022.[42]

Many large consumer packaged goods companies have signed the Ellen MacArthur Foundation's New Plastics Economy Global Commitment to increase their use of post-consumer recycled plastic in packaging. However, the current use of recycled plastic is very low for many of these companies. Coca-Cola uses just nine percent but has committed to increase to 50 percent recycled plastic in their primary plastic packaging by 2030. PepsiCo is currently at three percent recycled plastic in its packaging, and Unilever and L'Oréal are at less than one and five percent, respectively.[43]

Producers of consumer packaging are not currently required to report on recycled content use, so verifiable rates are unavailable, beyond those companies voluntarily reporting through commitments such as the New Plastics Economy. Recycled content in packaging is low even for packaging types which are easy to incorporate recycled content. According to data published by the Aluminum Association, the average post-consumer recycled content of aluminum cans is 50 percent, 23 percent for glass bottles, and only 3 percent for PET bottles. [44]

[41] European Commission, "Circular Economy: Commission welcomes Council final adoption of new rules on single-use plastics to reduce marine plastic litter," May 2019. https://ec.europa.eu/commission/presscorner/detail/en/IP_19_2631
[42] Department of Environment Food & Rural Affairs. Plastic Packaging Tax, May 2019. https://consult.defra.gov.uk/environmental-quality/plastic-packaging-tax/.
[43] Paben, Jared. Resource Recycling. October 30, 2019. "Report: Coca-Cola's global PCR number 9%, PepsiCo is at 3%" https://resource-recycling.com/plastics/2019/10/30/report-coca-colas-global-pcr-number-is-9-pepsico-is-at-3/.
[44] The Aluminum Association. Aluminum Can KPI Report, September 2019. https://www.aluminum.org/sites/default/files/KPI%20Report%202019.pdf.

Current Recycled Content Commitments from Corporations

Recycled content use is also a goal of many major consumer packaged goods companies and retailers; over 400 businesses across all stages of the plastic packaging value chain—representing more than 20% of all plastic packaging used globally—have signed onto the Ellen MacArthur Foundation's New Plastics Economy Global Commitment. The Commitment vision states that "businesses producing and/or selling packaging have a responsibility beyond the design and use of their packaging, which includes contributing towards it being collected and reused, recycled, or composted in practice," and that "using recycled content is essential (where legally and technically possible) both to decouple from finite feedstocks and to stimulate demand for collection and recycling."[45]

The Commitment includes several components of a circular economy for plastic, including use of recycled content. The table to the right shows a few signatories and their plastic recycled content commitments and target dates

Company	Target	Year
Colgate-Palmolive Company	25%	2025
Danone	100%	2025
Nestlé	25%	2025 in Europe
Coca-Cola	50%	2030
Unilever	25%	2025
Walmart	20% (private brand packaging)	2025

While the commitments represent ambitious targets, they are voluntary and lack any enforcement mechanism.

7.2 Recycled Content Requirements under EPR Policy

Given current market conditions, driving demand for recyclable materials is a necessary component of an EPR system to build a circular economy. Linking recycled content requirements to collection service requirements for residential PPP diminishes "the need to 'find markets' for materials, providing certainty for recycling systems investors as precondition to investments in further innovations in recycling."[46]

Recycled content requirements are being increasingly identified as a complementary policy to traditional EPR policy frameworks. The EPR policy would require producers to use recycled content in their packaging and to meet specific recycled content requirements for specific material types, as part of overall policy compliance.

A recent report from the Smart Prosperity Institute laid out the complementary nature of the conventional EPR approach as supply side policy with recycled content requirement as demand side

[45] Ellen MacArthur Foundation, "New Plastics Economy Global Commitment Progress Report October 2019", October 2019, p. 8. https://www.newplasticseconomy.org/assets/doc/Global-Commitment-2019-Progress-Report-Summary.pdf.
[46] Smart Prosperity Institute, "A Vision for Circular Economy for Plastics in Canada," February 2019, p.22. https://institute.smartprosperity.ca/sites/default/files/report-circulareconomy-february14-final.pdf.

policy: "Recycled content performance standards create a market for recycled materials that moves in step with the demand for plastic products regardless of input prices from other feedstocks."[47]

7. 2.1 Recycled Content Requirements and EPR

Recycled content requirements under the EPR policy would be set on a material-specific basis, ideally using the same material categories as those used for recycling rate requirements – such as paper, metal (potentially broken out to aluminum and steel), glass, and plastic (potentially broken out to rigid and film/flexible). This would allow producers flexibility to meet the requirements in ways that align with other health and safety requirements for packaging, and that deploy recycled content to its highest and best use across packaging applications.

For example, recycled content requirements under the plastic category may achieved by concentrating on non-food contact applications, where feedstock purity is less stringently regulated. Under the paper category, recycled content requirements might be achieved by using recycled fiber in corrugated cardboard and containerboard applications rather than in high-grade paper products. As long as the overall recycled content requirement is met for that material category.

As with recycling rate requirements, the initial numeric targets would be set at ambitious but achievable levels, informed by industry input and information about current levels of recycled content and feasibility of accelerated use. The policy would also establish a method for regular evaluation and future updating of requirements as needed.

Implementing a recycled content requirement would be made feasible under an EPR system because producers are already required to report the amount of packaging they sell into the state. The PRO is also collecting data from its members on packaging and material types and quantities for fee setting purposes. The PRO could also track the producers' use of recycled materials and determine if they were meeting recycled content requirements collectively.

The recycled content requirements would become another performance requirement for the PRO to manage, allowing it discretion to structure its member fees and program model to ensure the requirement is met by its members. This could be done through an internal mechanism like a recycled content credit trading scheme or the through an eco-modulated fee structure that rewards the use of recycled materials.

The monitoring system established under the EPR policy would allow the authority responsible for enforcement to identify free riders, monitor compliance, and enforce rules with penalties.

[47] Smart Prosperity Institute, February 2019, "A Vision for a Circular Economy for Plastics in Canada," p. 22. https://institute.smartprosperity.ca/sites/default/files/report-circulareconomy-february14-final.pdf.

Recycled Content Requirements Drive Market Demand in California and Oregon

Including recycled content requirements in an EPR policy framework like this would be new, but it is an approach that has been used in California and Oregon for years to drive the circular economy in packaging in some applications, with recent legislation proposed to expand it.

- In California, under the state's existing Rigid Plastic Packaging Container (RPPC) program, rigid plastic packaging must meet a minimum 25 percent post-consumer recycled content requirement or demonstrate compliance through another compliance option available under the program rules.
- Oregon also requires rigid plastic containers contain 25 percent post-consumer recycled plastic content under its rigid plastic container law (ORS 459A).
- A California regulation requires that garbage bags must contain at least 10 percent recycled content (14 CCR § 17979).

Results from these programs and requirements are difficult to verify without a robust monitoring and compliance mechanism. State compliance data is limited; while California publishes a list of compliant and non-compliant businesses, in the case of the RPPC program, the last year that CalRecycle conducted compliance certifications was 2005.

According to recycling industry representatives, these requirements have been vital drivers of demand for recycled plastics. "Seventy percent of our customers are supplying the California marketplace, and that's from our facilities in both Ontario and Pennsylvania," said Eadaoin Quinn, director of business development and procurement with EFS-plastics, a leading North American plastics recycler and compounder. "If another area were to enact legislation similar to California, that would be the exact signal that we and our competitors need in order to invest in additional infrastructure."[48]

7.3 Transition Considerations for Recycled Content Requirements

A tracking mechanism must be in place to enforce the recycled content requirements. The tracking could be built into the role of the PRO and would create an efficient collaboration mechanism between producers for achieving recycled content requirements collectively and minimizing government involvement. In establishing an EPR system, regulators would need to allow sufficient time during the transition phase for development of the recycled content "trading mechanism" or other means of quantifying the use of recycled materials.

The EPR policy framework supports development of a compliance monitoring and enforcement system that could be easily adapted to also oversee producers' obligation to use recycled content in their packaging. This bundling of both end-of-life management and recycled content requirements would lend itself well to efficient administration and enforcement of these obligations.

[48] Carolyn Jarvis & Megan Robinson, May 1, 2019, "Canada's recycling industry is on life-support. Here's how to fix it." *Global News*. https://globalnews.ca/news/5207352/how-to-fix-canadas-recycling-industry/.

Chapter 8. Compliance Monitoring and Enforcement

8.1 Existing System Compliance Monitoring and Enforcement

Under existing state law, county and city governments are responsible for developing and implementing aggressive and effective waste reduction and source separation strategies for solid waste. The state government is required to ensure that local governments are meeting this responsibility, and to provide county and city governments with adequate resources to do so. Beyond this, there are currently no definitive or quantitative requirements set that all counties or cities are required to meet.

State oversight of local governments' responsibilities related to residential recycling programs occurs in two primary ways:

1) The Washington State Department of Ecology reviews all Solid Waste Management Plans, which local governments (counties and/or cities) must review and revise (if necessary) every five years (RCW 70.95.080). Ecology staff works with local government staff to ensure each plan meets all regulatory requirements before granting plan approval. Counties themselves are responsible for ensuring that cities within their jurisdiction meet the collection service standards and other implementing ordinances associated with planned recycling programs and services. Ecology has no direct role in compliance monitoring or enforcement related to county plans or recycling outcomes except as it relates to a specific facility's handling of materials, which is regulated under a separate chapter of the administrative code (WAC 173-350).

2) The Washington Utilities and Transportation Commission is responsible for ensuring that WUTC-regulated collection companies provide service to customers within their service areas in accordance with the service standards set in county solid waste management plans, and regulates the rates charged for such services. Complaints about non-compliance from regulated collection companies are directed to the WUTC, which has enforcement powers over regulated companies.

Local governments with contracted collection service are responsible for monitoring contracted collectors' compliance with contract terms and may use the contract's enforcement provisions to correct non-compliant behavior but rely on the contract language to set the terms of acceptable actions.

Although local governments are assigned primary responsibility for implementing recycling programs, state law notes that functions necessary to assure effective programs throughout the state are reserved to the state (RCW 70.95.020). Furthermore, state, county, and city governments are identified as having shared responsibility for monitoring the cost-effectiveness and environmental safety of solid waste management, including for recycling programs (RCW 70.95.010(*§*6)). These provisions, however, have no enforcement mechanism, other than the potential for legislative action if the state is unable to meet its goals. RCW 70.95.010 lays out additional responsibilities for the state that currently have no mechanism for enforcing, such as that "excessive and nonrecyclable packaging of products should be avoided" (*§*14) and that "market development must be encouraged on a state, regional, and national basis to maximize its effectiveness" (*§*19).

Under the existing system, producers are not held responsible for the use of excessive and nonrecyclable packaging or for involvement in recycling market development. Producers are not required to report on how much packaging and paper is sold into the state annually, what level of recycling is achieved, or how much recycled content is used.

8.2 Compliance Monitoring and Enforcement under EPR Policy

The EPR policy framework laid out in Chapter 1, EPR Policy Framework, requires producers to meet multiple specific, timebound performance requirements. The effectiveness of the policy approach will depend, in part, on implementing a meaningful, effective compliance monitoring and enforcement system.

A guidance document on extended producer responsibility policies published by the OECD in 2016 recommended that governments establish consistent and credible means for enforcing EPR obligations. Recommendations include establishing registries of producers, a mechanism for official accreditation of producer responsibility organizations (PROs), and adoption of appropriate sanctions for non-compliance. It also emphasized that adequately resourced monitoring systems need to be established and that the performance of EPR operations should be regularly independently audited.[49]

Various models exist for compliance monitoring and enforcement of EPR policies. In many places, including British Columbia, a government agency is charged with compliance monitoring and enforcement. In other systems, including in Germany and Austria, a third-party entity or quasi-governmental agency—often called a registrar or clearinghouse—is assigned the role of monitoring/overseeing producer participation through management of a producer registration system, with remaining monitoring and enforcement activities assigned to a government agency.

In Ontario, a new system for compliance monitoring and enforcement has recently been adopted that creates an independent regulatory agency, separate from the PRO, funded through registration fees paid by producers, with authority to monitor and enforce both producer participation and compliance with performance requirements. The benefit of the new Ontario approach is that enforcement mechanism for the EPR system is self-funded, with revenue generated from producers directly, not through government taxation. The regulatory authority, called the Resource Productivity and Recovery Authority (RPRA) is independent from regulated producers and has sufficient power as well as sustainable, dedicated funding to meaningfully enforce the law.

In Washington State, the EPR policy framework includes a similar approach, in which the state would establish a regulatory authority (Authority)—in the form of an agency, commission, or not-for-profit corporation—with the following areas of responsibility:

- Maintaining a registry of producers obligated under the policy and ensuring their participation in a producer responsibility program (individually or through a PRO).
- Oversight of stewardship plan development, including the mandatory public consultation process, and approval of the stewardship plan prior to implementation.
- Evaluating producers' compliance with policy requirements through review of annual reports submitted by producers.
- Levying fines on "free rider" producers for failure to register or failure to pay dues to PRO.
- Levying fines on producers, individually or through their representative PRO, for failure to operate under an approved stewardship plan or for failure to achieve the performance requirements established in the policy.

[49] Organisation for Economic Co-operation and Development, *Extended Producer Responsibility: Updated Guidance for Efficient Waste Management*, OECD Publishing, Paris, 2016. https://doi.org/10.1787/9789264256385-en.

As in Ontario, the Authority could be made up of a board appointed based on skills-based parameters and excluding all industry-associated professionals due to conflicts of interest.[50]

During the initial phase of implementation, producers would be required to develop a stewardship plan using a mandatory public consultation process as described in the policy framework. The resulting plan would describe the intended approach and activities to be undertaken to fulfill producers' obligations and achieve the mandated performance requirements. The plan would require approval from the Authority to proceed and producers would not be considered in compliance with the policy requirements until they are operating under an approved plan. Producers would be required to repeat the consultation and stewardship plan development process every five years.

Producers would also be required to submit annual reports to the Authority providing transparency about system costs, benefits, and material flows, and reporting on performance in relation to the requirements and requirements defined in the policy. The key information to be reported annually would include:

- The amount of residential PPP sold into the state (by weight), broken down to material type in alignment with the material-specific recycling rates and recycled content requirements.
- The amount of recycled content used in residential PPP sold into the state, also by material type.
- The amount of residential PPP collected, processed, and marketed, by material type, with corresponding recycling rate calculations. Although only the amount of recyclable materials marketed would be used to calculate material-specific recycling rates, all three levels of data would be beneficial for providing transparency about system efficacy.
- Reprocessors or end users receiving materials, including tons of each material received. Due to the proprietary nature of this information, details may need to be shared confidentially with the Authority only for auditing/verification purposes, and more general information made publicly available.
- Details on residential recycling collection services and education and outreach provided, in accordance with statewide minimum collection service requirements.
- Details on program costs paid by producers.
- Amount of recycled materials used by the producers in their products/packaging and their progress toward meeting the recycled content requirements.

The Authority could also set other reporting requirements deemed necessary for compliance monitoring.

8.3 Transition Considerations for Compliance Monitoring and Enforcement

The policy framework uses an outcomes-based approach, meaning that the policy defines specific performance requirements and other desired outcomes along with timelines for achieving them, and then gives producers flexibility and space for innovation around how to achieve those outcomes. This is the increasingly preferred approach to EPR policy in Canada and Europe and is recognized by EPR experts as essential for EPR policies to achieve their environmental goals.[51,52]

[50] Ontario, Resource Recovery and Circular Economy Act, 2016. https://www.ontario.ca/laws/statute/16r12.
[51] Usman Valiente, "An Outcomes-Based Approach to EPR," *Solid Waste & Recycling Magazine*, December 1, 2012.
[52] Deloitte, *Development of Guidance on Extended Producer Responsibility*, Prepared for the European Commission, 2014. P.133.

However, to ensure that the transition to an EPR system is undertaken in a transparent manner with meaningful opportunities for stakeholder input, it will be important to require stakeholder consultation as part of the plan development process to be undertaken by producers during the transition phase.

In the conceptual model, the mandated public consultation process would be the first step in the transition process, according to consultation requirements established in the policy, and would be overseen by the regulatory authority. Examples could include requirements to hold a minimum number of regional public meetings, conduct stakeholder surveys on specific topics, offer written comment periods, and produce a consultation report documenting feedback received through the consultation process.

This consultation phase would be given a minimum timeline established in the policy of 1-2 years prior to the deadline for submission of an initial stewardship plan. This would allow feedback from the consultation to meaningfully inform and shape the development of the stewardship plan.

Appendix A

Materials included in the PPP EPR program in British Columbia

Materials List

PAPER

RECYCLEBC

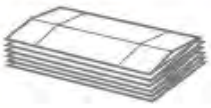
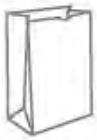
MATERIAL & DESCRIPTION	DO NOT INCLUDE
 **Newspaper and Flyers** Daily and community newspapers and advertising flyers	Plastic bags used to cover newspaper/flyers (take to Recycle BC recycling depot), rubber Bands
 **Magazines and Catalogues** All types	
 **Telephone Books** Phone books, directories	Hardcover or paperback books (donate or sell)
 **Writing home/office paper and correspondence** Note pads; loose leaf paper; white or coloured computer copier and printer paper; printed paper; plain and window envelopes; shredded paper **If you live in a community or multi-family building that has separate bins or bags for paper and containers recycling,** you may place shredded paper securely inside a paper bag or box (to prevent litter) and include with your paper recycling. **If you live in a community or multi-family building that utilizes one bin or bag for all of your recycling,** please place shredded paper inside a securely-tied, see-through, plastic bag (no opaque, coloured or black bags).	

Some items are recyclable outside of Recycle BC's program. To find out where you can recycle something other than packaging or printed paper, please contact the Recycling Council of BC. In the Lower Mainland, call 604-RECYCLE or BC toll free 1-800-667-4321.

Materials List

PAPER

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Corrugated Cardboard Boxes** Shipping boxes, grocery and liquor store boxes, pizza boxes Empty Boxes: Flatten large corrugated boxes and cut down to no larger than 30" wide (78 cm) X 30" tall (78 cm), staples and tape OK	Cardboard boxes with wax coating, e.g. empty shipping boxes made available for residents to transport their groceries home
	**Cardboard/boxboard** Boxes for cereal, shoes, tissues, pizza, frozen entrees, desserts, detergent, etc. Carrier trays for bulk bottled water, soft drinks, cans, food, etc. Cores for paper towel and toilet tissue Flatten and place boxboard directly into the collection container, not inside another box Remove liner bags and food residue	Paper towels or napkins (include with green waste, if applicable, tissues
	**Moulded boxboard packaging** Egg cartons, take-out beverage trays, empty paper-based garden pots, etc	Dirt in garden pots
	**Paper Bags (kraft paper)** Any colour, including brown grocery sacks, white prescription bags, brown envelopes	Padded envelopes, foil-lined bags (e.g., packaged cookies)
	**Multi-layer paper bags** Multi-layered paper bags for flour, sugar, etc.	Bags with a foil layer, bags with a plastic layer

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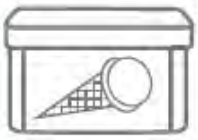
Materials List

CONTAINERS

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Paper Cups** For hot and cold beverages • Empty and rinse cups • Remove lids and place loose with container recycling • Recycle paper sleeves separately	Straws
	**Gable-top cartons** For milk, milk-type beverages, cream, substitute eggs, sugar, molasses, etc. • Empty and rinse cartons • If carton includes plastic screw cap, remove cap and place loose in recycling container	Paper towels or napkins (include with green waste, if applicable, tissues
	**Aseptic boxes or cartons** For milk, milk-type beverages, cream, soup, broth, sauces, etc. • Add loose to recycling container	Juice cartons (return for deposit refund), straws, stand-up pouches
	**Frozen dessert boxes** For ice cream, frozen yogurt, etc. • Empty and rinse cartons	Juice/drink boxes (return for refund

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Materials List

CONTAINERS

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Empty Aerosol Containers** For food, air fresheners, shaving cream, deodorant, hairspray, etc. • Empty cans • Remove caps and place loose in recycling container	Spray paint cans, erosol cans with any contents remaining, propane cylinders
	**Spiral Wound Cans and Metal Lids** For frozen juice concentrate, potato chips, cookie dough, coffee, nuts, baby formula, etc. • Remove lids and place loose in recycling container	Paper towels or napkins (include with green waste, if applicable, tissues
	**Steel Cans and Lids** For food including pet food; tins for cookies, tea, chocolates, etc.; include metal lid • Empty and rinse cans • Labels OK • Put metal lid inside can and squeeze slightly	Steel beverage cans (return for deposit refund), steel paint cans, coat hangers (return to dry cleaners), pots, pans and baking trays, propane cylinders, metal toys, appliances, metal hardware or other scrap metal, wiring or metal cords, extension cords
	**Alunimum Cans and Lids** For food, e.g. seafood, cat food, etc. • Empty and rinse cans • Labels OK • Put metal lid inside can and squeeze slightly	Propane tanks or propane canisters, deposit cans (return for deposit refund)

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Materials List

CONTAINERS

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Aluminum Foil and Foil Take-Out Containers** Foil wrap and take-out containers including pie plates, food trays, etc. • Empty and rinse containers	Chip or foil bags, foil wrap with paper backing for butter, cigarettes, etc., foil-lined cardboard take-out containers or lids
	**Plastic Jugs with Screw Tops** For milk, cooking oil, laundry detergent, fabric softener, cleaning solutions, cleaning products, body care products, windshield washer fluid, etc. • Empty and rinse jugs • Labels OK	Jugs for flavoured tea, juice, other beverages (return for deposit refund)
	**Plastic Clamshells** For baked goods, fruit, produce, eggs, etc. Containers are clear with hinged or click-closed tops. • Empty and rinse containers • Labels OK	Packaging labelled biodegradable or compostable, liquid-absorbing pads
	**Plastic Jars and Lids** For peanut butter, jam, nuts, condiments, vitamins and supplements, personal care products and cosmetics, pharmaceuticals, etc. • Plastic jars have wide mouths with screw-top lids • Empty and rinse jars • Labels OK • Remove lids and place loose in recycling container	Beverage bottles (return for deposit refund), stand-up pouches, containers for motor oil, vehicle lubricant, or antifreeze products

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Materials List

CONTAINERS

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Plastic Bottles and Caps** For food, dish soap, mouthwash, shampoos, conditioners and other personal care products, pills and vitamins, laundry products, household cleaners, automotive cleaners, e.g., glass cleaner, windshield washer fluid, etc. • Plastic bottles have screw caps, spray pump or pull-up tops • Empty and rinse bottles • Labels OK • Remove caps, spray pump and pull-up tops, and place loose in recycling container	Beverage bottles (return for deposit refund), stand-up pouches, containers for motor oil, vehicle lubricant, or antifreeze products
	**Plastic Trays and Tops** For deli chicken, single serve meals, prepared foods, baked goods, housewares and hardware, e.g. screws, picture hangers, etc. • Containers are clear or have black bottom trays with clear domes • Empty and rinse trays	White, black or colour foam trays (take to Recycle BC depot), soft plastic packaging for perishable foods, e.g. meat, poultry, fish or cheese, etc., plastic/foil packaging for items like chewing gum and pills
	**Plastic Tubs and Lids** For margarine, spreads, yogurt, cottage cheese, sour cream, ice cream, etc. • Empty and rinse tubs • Remove lids and place loose in recycling container • For single-use coffee and tea pods: Empty and rinse pods. Remove lids and do not include lids with recycling. Grounds can be composted.	Packaging labelled biodegradable or compostable, plastic or foil lids from coffee and tea pods, coffee grounds (include with green waste, if applicable)

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Materials List

CONTAINERS

RECYCLEBC

	MATERIAL & DESCRIPTION	DO NOT INCLUDE
	**Plastic Cold Drink Cups with Lids** Beverage take out cups • Empty and rinse cups • Remove lids and place loose in recycling container.	Foam cups (take to Recycle BC depot), plastic packaging labelled biodegradable or compostable, napkins (include with green waste, if applicable), straws
	**Plastic Garden Pots and Trays** For bedding plants, seedlings, vegetable plants, etc. • Remove remaining soil from garden pots and trays.	Ceramic plant pots, lawn edging, tarps, plastic furniture or toys, garden hoses, plastic string or rope
	**Plastic Pails** For laundry detergent, ice cream, pet food, etc. • Recycle BC accepts pails that are less than 25L; larger pails should be disposed of via a commercial hauler.	Plastic paint cans, plastic pails larger than 25L, pails for lubricants and oils
	**Microwavable Bowls and Cups** For soups and entrees • Remove lids and place loose in recycling container	Bowls with metal rims, napkins (include with green waste, if applicable), cutlery

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Materials List

GLASS

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Non-Deposit Glass Bottles and Jars** Clear or coloured. Check with your recycling collector for instructions • Empty and rinse bottles and jars. Labels OK • Include lids with container recycling	Drinking glasses, dishes, cookware, whole or broken window glass or mirrors, ceramic mugs or other ceramic products, deposit glass bottles (return for deposit refund), light bulbs and light fixtures

May be collected separately from curbside or multi-family buildings.

Check with your collector.

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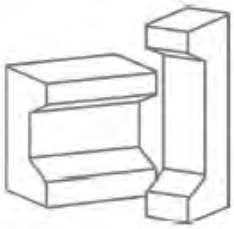
Materials List

DROP-OFF ONLY

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Plastic Bags and Overwrap** Plastic bags for groceries, dry cleaning, bread, newspapers and flyers; bags for produce, dry bulk foods, and most frozen vegetables; outer bags and wrap for diapers, feminine hygiene products, paper towels, tissues, soft drink can flats; bags for water softener salt, wood pellets and garden products; overwrap on mattresses, furniture and electronic equipment • Empty bags of food	Crinkly cellophane wrap, for tea, floral arrangements, etc., stand-up pouches, bags for pre-washed salad, kitchen stretch wrap or plastic wrap for meat, poultry, fish or cheese, chip or snack bags, zipper-lock sandwich and freezer bags, plastic shipping envelopes, packaging labelled biodegradable or compostable, soft packaging for perishable foods, e.g. bacon, deli meats, cheese slices, fish, etc., lumber or construction wrap, garbage bags or any bag sold as a product
	**Foam Food Containers and Trays** Meat trays, foam egg cartons, foam clamshells, foam cups and bowls for take-out food; etc. • Remove food residue and liquid-absorbing pads • Sort white and coloured foam into appropriate collection container at depot	Liquid-absorbing pads, shrink wrap for meat, poultry, fish, cheese, etc., napkins (include with green waste, if applicable)
	**Foam Cushion Packaging** Foam cushion packaging used to protect electronics, small appliances, etc. • Remove labels, tape paper, cardboard • Sort white and coloured foam into appropriate collection container at depot	Labels, tape, paper and cardboard (recycle separately), foam peanuts, packing chips or noodles, blue or pink foam board insulation, squishy or flexible foam, foam furniture (e.g. sofa cushions)

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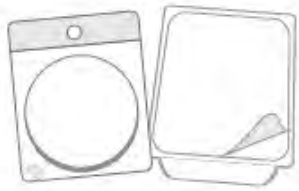
Materials List

DROP-OFF ONLY

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Other Flexible Plastic Packaging: Stand-up and Zipper Lock Pouches** Zipper lock pouches for frozen foods like berries, seafood, prepared foods; zipper lock bags for fresh foods like grapes, deli meats; stand-up pouches for baby food, hand soap refills; stand-up and zipper lock pouches for dried fruits, granola, sugar, oatmeal, grated cheese, etc.	Plastic-lined paper, 6-pack rings, paper-lined plastic, biodegradable and/or compostable plastic, vinyl, plastic squeeze tubes
	**Other Flexible Plastic Packaging: Crinkly Wrappers and Bags** Bags for potato chips, candy, dried pasta, cereal, etc.; wrappers for cheese slices, snack bars, instant noodles, etc.	Plastic-lined paper, 6-pack rings, paper-lined plastic, biodegradable and/or compostable plastic, vinyl, plastic squeeze tubes
	**Other Flexible Plastic Packaging: Flexible Packaging with Plastic Seal** Packaging for fresh pasta, pre-packaged deli meats, pre-packaged cheese, etc.	Plastic-lined paper, 6-pack rings, paper-lined plastic, biodegradable and/or compostable plastic, vinyl, plastic squeeze tubes

Note: The Other Flexible Plastic Packaging category was introduced in June 2018. All material listed above is collected together under this category at Recycle BC depots and London Drugs locations.

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Materials List

DROP-OFF ONLY

RECYCLEBC

MATERIAL & DESCRIPTION		DO NOT INCLUDE
	**Other Flexible Plastic Packaging: Woven and Net Plastic Bags** Net bags for avocados, onions, oranges, lemons, limes, etc.; woven plastic bags for rice, etc.	Plastic-lined paper, 6-pack rings, paper-lined plastic, biodegradable and/or compostable plastic, vinyl, plastic squeeze tubes
	**Other Flexible Plastic Packaging: Non-food Protective Packaging** Padded protective plastic like plastic shipping envelopes, plastic air packets, bubble wrap	Plastic-lined paper, 6-pack rings, paper-lined plastic, biodegradable and/or compostable plastic, vinyl, plastic squeeze tubes

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