

RE: CCSMM Public Engagement Questions - Request for Comment and Solutions

BR

Bessel, Robert <RBessel@TownofCantonCT.org>
Wed 10/7/2020 11:39
To: Nelson, Chris; DEEP RecyclingProgram

Oregon Report.pdf
1 MB

Hi Chris –

The State of Oregon has engaged in a thorough study of improvements to their recycling policies and processes. I have attached a report issued in January 2020 to the Oregon Recycling Steering Committee that examines five legal and relational framework scenarios. I believe this may be useful to Connecticut's efforts to Increase Recycling (the working group I am on).

Robert Bessel
First Selectman
Town of Canton, CT
860-693-7847

From: Nelson, Chris [mailto:Chris.Nelson@ct.gov]
Sent: Monday, October 5, 2020 11:41 PM
To: Nelson, Chris
Subject: CCSMM Public Engagement Questions - Request for Comment and Solutions

CAUTION: This email came from outside the organization. Do not click links or open attachments if you are unsure the message is safe.

Hello,

Attached please find a **revised** request for comment & solutions related to the CT Coalition for Sustainable Materials Management ([CCSMM](#)) initiative.

Comments can be submitted electronically to DEEP.RecyclingProgram@ct.gov.

Comments are requested on the described focus areas by October 15, 2020, though late comments can be submitted and will be considered as received through the fall of 2020, when the Coalition will be conducting its work.

Also, please note that CCSMM Working Group meetings will be kicking off later this week and next week. All Working Group meetings will be conducted over ZOOM, and participants will need to pre-register. Following below are details for two Working Group meetings taking place

later this week. Details for additional Working Group meetings will be posted on the [CCSMM webpage](#).

EPR Working Group meeting

Thurs 10/8/2020

10:00am-12:00pm

To register: <https://ctdeep.zoom.us/meeting/register/tJEocOmsqzkqHtKC2ZaBkjUZXHjj-kDhAyZ4>

Organics Working Group meeting

Fri 10/9/2020

9:00am-11:00am

To

register: <https://ctdeep.zoom.us/meeting/register/tJEqfumuqT8iGtytsdGTy7oWtQQalv19Rsxt>

Regards,

Chris

Chris Nelson

Supervising Environmental Analyst

Sustainable Materials Management Planning & Implementation

CT Department of Energy & Environmental Protection (DEEP)

79ElmStreet

Hartford, CT 06106

chris.nelson@ct.gov

phone: 860-424-3454

fax: 860-424-4059

www.ct.gov/deep/recycle

www.RecycleCT.com



EVALUATION OF FIVE LEGAL AND RELATIONAL FRAMEWORK SCENARIOS

A REPORT TO THE OREGON
RECYCLING STEERING COMMITTEE

January 28, 2020

PREPARED BY:

RRS  | recycle.com

COMMISSIONED BY:



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Introduction

This report was developed to support the Oregon Recycling Steering Committee (RSC), a multi-stakeholder group convened in May 2018 by the Oregon Department of Environmental Quality (DEQ). The committee is tasked with identifying what Oregon's future recycling system should look like, using research to inform recommendations to modernize the current system to better meet the goals established by Oregon's [2050 Vision and Framework for Action](#).

One of the RSC's work flows was managed by the Legal and Relational Frameworks subcommittee, which sought to identify and evaluate alternative policy, programmatic, and regulatory approaches to improve upon the existing recycling framework. In spring of 2019, the subcommittee conducted a two-part [gap analysis](#) of the current Oregon system, comparing it against a set of [desired functions](#) of Oregon's future recycling system that were approved by the RSC in March 2019.

To help the RSC understand potential paths forward, DEQ issued a Request for Proposals (RFP) for research and evaluation services to research recycling system frameworks that might offer advantages over the existing system in Oregon. This resulted in a contract with Resource Recycling Systems (RRS). To determine the frameworks to be evaluated for this project, the subcommittee used meetings over a three-month period to discuss every framework submitted to DEQ through its RFP process. Frameworks from both existing systems as well as more theoretical frameworks were considered and eventually 10 frameworks were selected for the project.

RRS used the aforementioned gap analysis, as well as information gleaned from conversations with DEQ and RSC members, to create a thorough Oregon baseline against which the initial 10 recycling system frameworks were evaluated. Each framework was assessed to determine the extent to which it supported the desired functions, as defined by the RSC. [The summaries of those frameworks were presented to the RSC in December 2019.](#)

RRS then worked with the RSC to draw high-performing elements from the initial 10 frameworks and create a range of alternatives to meet the RSC's goal to modernize the Oregon recycling system. This resulted in the creation of five framework scenarios. This report presents and evaluates those five scenarios to provide RSC members information as they work to determine the best path forward for the state.

Executive Summary

The sudden collapse of recycling markets in late 2017 revealed a number of challenges in Oregon's recycling system. In response, the Oregon Department of Environmental Quality (DEQ) convened a Recycling Steering Committee (RSC) in early 2018. The RSC is charged with evaluating and making recommendations for modernizing Oregon's recycling system. Its work is exploring two sets of issues in parallel: 1) recycling infrastructure, including collection and processing systems, and 2) legal and relational frameworks, which are the systems of laws, regulations and agreements that assign responsibility and accountability for different parts of the recycling system. This report is a part of the second work stream. It provides an evaluation of five alternative scenarios for legal and relational frameworks for the Committee's consideration.

The five alternative framework scenarios considered in this report are designed to offer different pathways to improve upon the existing recycling framework in Oregon. They each would address gaps in the current Oregon framework, as evaluated against the RSC's desired functions, using different tools and approaches.

Earlier stages of the Committee's work, including the gap analysis and the evaluation of alternative frameworks against desired functions, led to some key conclusions. First, the current Oregon system provides reliable access to recycling collection for most state residents and commercial customers, with well-defined program requirements established by DEQ and implemented by local governments. Also, the weaknesses in the Oregon system, as compared to desired functions, include (but are not limited to) a lack of system integration and harmonization, limited ability to incorporate life-cycle considerations, the lack of transparency and accountability within the processing segment of the system and the absence of clearly-defined roles and responsibilities post-collection, including the processing and marketing of recyclables. The scenarios incorporate different approaches to build on the existing strengths and address the gaps and weaknesses.

The scenarios fall into two broad governance categories. The first group of scenarios – enhanced government managed and state government managed (MRF contracts) – rely on enhanced government managed systems, while the second group – post-collection producer responsibility, producer responsibility with local control and full producer responsibility with optional local involvement – utilize an extended producer responsibility (EPR) approach.

The two government managed scenarios would add elements to Oregon's existing framework that improve system harmonization and integration and clearly define the roles and responsibilities for processors (i.e. material recovery facilities, or MRFs) in the post-collection system. These two scenarios are similar in most aspects but differ in the approach to engaging processors in the framework. In the enhanced government managed scenario (aka Scenario 1), MRFs are subject to a new regulatory process, while in the state government managed (MRF contracts) scenario (aka Scenario 2), the state would contract with MRFs to provide processing services to the state's communities. Using contracting tools would provide DEQ with greater oversight over the downstream flow of materials and would mitigate the risk to communities and ratepayers associated with recycling market volatility. Both of these scenarios would require additional funding sources, with the state government managed scenario requiring a significantly higher amount¹.

The second group of scenarios include a range of EPR models. EPR programs require the producers (i.e., brand owners and retailers) of the products and packaging to take financial and/or operational responsibility for their management at end of life. The three EPR scenarios evaluated allocate different levels

¹ Note, cost modeling was not within the scope of this project, so the extent of additional funding has not been evaluated.

of financial and operational responsibilities to producers. All of these models would offer a reliable source of additional funding for new system elements. As proposed, they would also provide a platform for incentivizing design for environment considerations within the producer fee structure. Through the incorporation of eco-modulation, the fee structures provide incentives for positive design and recycling attributes, and penalties for negative attributes.

The post-collection producer responsibility scenario (aka Scenario 3) would engage producers in the financing and management of the recycling system post-collection, requiring them to contract with MRFs and offer recycling processing at no cost to communities. In this scenario, the collection system would function much as it does today. However, in this scenario (and in the two non-EPR scenarios), DEQ would play a stronger role to ensure system integration, including determining the materials to be collected around the state. In the EPR scenarios focused on producer responsibility with local control and full producer responsibility with optional local involvement (aka Scenarios 4 and 5), producers would determine which materials to collect, subject to statutory requirements and approval by DEQ. The producer responsibility with local control scenario (aka Scenario 4) builds on Scenario 3 to require that producers take financial responsibility for collection. This would replace the existing ratepayer financing structure but maintain local management of recycling collection programs. The full producer responsibility with optional local involvement scenario (aka Scenario 5) places full financial and operational responsibility for the recycling system on producers, including both collection and processing. In Scenario 5, local governments could choose to have a role as service providers to producers, but producers would be responsible for contracting for both collection and post-collection services and ensuring overall system performance.

Figure 1 describes key roles and responsibilities of each of the core stakeholders within the five scenarios, while Table 1 depicts those roles and responsibilities as they relate to key elements of the Scenarios. Figure 2 shows the operational, governance and financial flows in the current Oregon framework, and in each of the Scenarios evaluated.

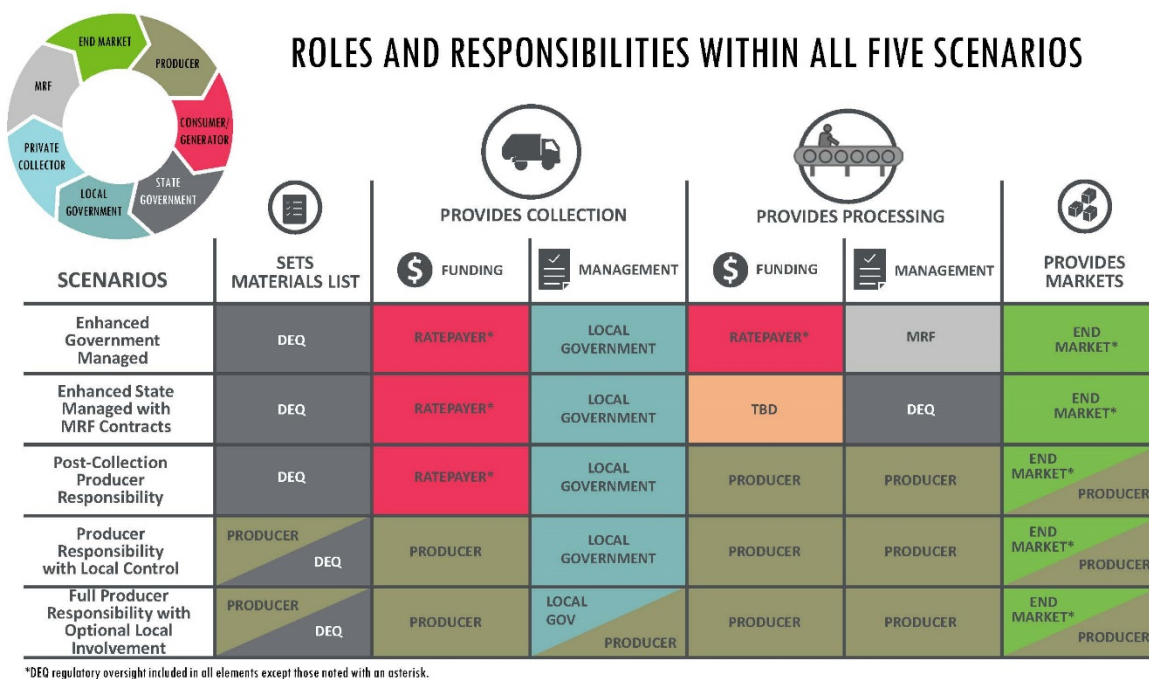



Figure 1. Roles and Responsibilities Within All Five Scenarios



The remainder of the report describes each grouping of scenarios, including how each would play out from a financial, operational, and governance perspective; expected roles and responsibilities of key players; key transitional considerations; the benefits and challenges of each; and how they would address the desired system functions as defined by the RSC. Appendices C-G present each scenario independently.

Generally speaking, each of the five scenarios provides opportunities to improve Oregon's recycling system to better meet the desired functions of a future system, as defined by the RSC. The degree of improvement and alignment with desired functions differs between the scenarios, as illustrated in the report and Appendix B. With those improvements would come new challenges, which are also identified in the report. Each of the scenarios would also require one or multiple forms of legislation to change current Oregon statute.

By identifying the core elements, advantages, and challenges of the five scenarios evaluated, this report aims to inform consideration of options by all stakeholders and deliberation within Oregon's Recycling Steering Committee as it works to develop recommendations to modernize Oregon's recycling system.

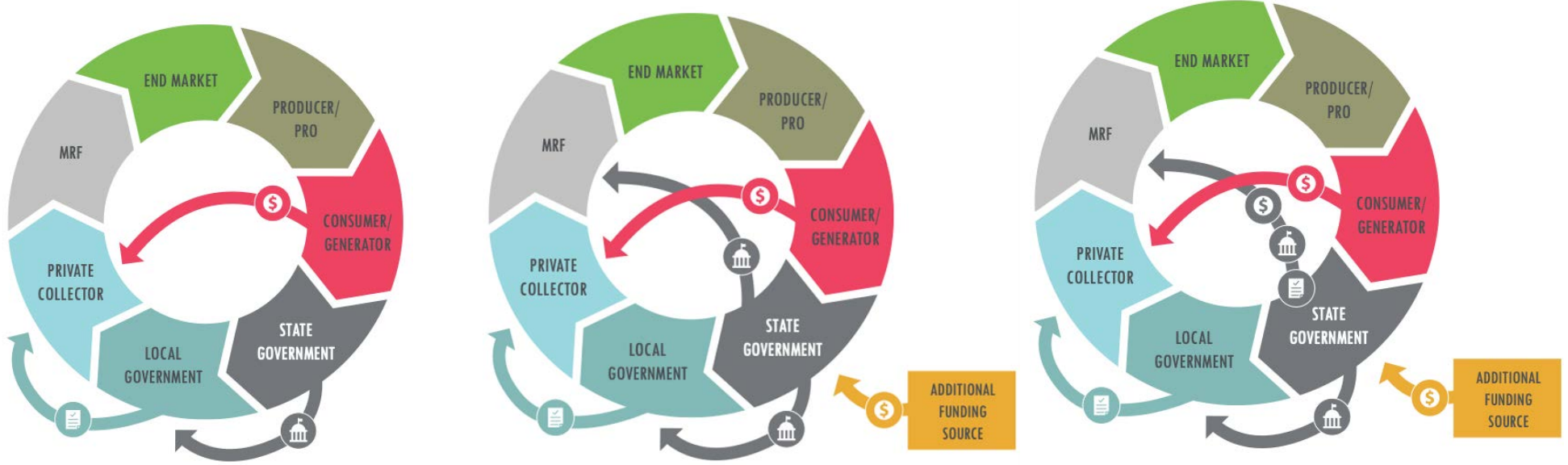
Five Scenarios: Roles and Responsibilities Compared

Table 1. Five Scenarios: Roles and Responsibilities Compared

	State Regulator (DEQ)	Local Government	Private Collector	Material Recovery Facilities (MRFs)	Producer / Producer Responsibility Org
Scenario 1 – Enhanced Government Managed	Regulate and oversee the system; conduct LCA research for use in EOL decisions; create a new Recycling Advisory Committee; regulate MRFs; set a statewide mandatory list of recyclables for collection; require parallel recycling access and variable rate pricing; implement other key elements	Plan and implement recycling programs that meet new state requirements; update franchise or license agreements to comply with new policies	Collect material in accordance with new requirements; deliver material to permitted or certified MRF(s), as defined in agreement	Provide service in accordance with state certification or permitting requirements, including operating and equity standards, reporting requirements, and contamination targets	No specified role
Scenario 2 – Enhanced State Managed with MRF Contracts	Regulate and oversee the system; expansion of authority matching that of Scenario 1; contract with MRFs for processing of program materials	Plan and implement recycling programs that meet new state requirements; update franchise or license agreements to comply with new policies	Collect material in accordance with new requirements; deliver material to contracted MRF(s), as defined in agreement	Provide service in accordance with state certification or permitting requirements, from Scenario 1; compete for state contracts and, if selected, comply with terms	No specified role
Scenario 3 – Post-Collection Producer Responsibility	Regulate and oversee the system; expansion of authority matching that of Scenario 1 plus authority to negotiate, approve, oversee, and enforce producer’s program plan; integrate ratepayer-funded collection with producer funded post-collection activities; coordinate litter abatement and waste reduction/prevention, and upstream activities with resources provided by producers	Plan and implement recycling collection programs that meet new state requirements (including education); update franchise or license agreements to comply with new policies	Collect material in accordance with new requirements; deliver material to contracted MRF(s), as defined in agreement	Provide service in accordance with state certification or permitting requirements, from Scenario 1; compete for PRO(s) contracts and, if selected, comply with terms	Manage and fund recycling processing and marketing system; develop program plan defining how obligation will be met; fund litter abatement and waste reduction/prevention, and upstream activities; provide educational and outreach tools and resources to support Local Government educational programs; execute plan and report on results
Scenario 4 – Producer Responsibility with Local Control	Regulate and oversee the system; expansion of authority matching that of Scenario 3; approve mandatory list of recyclables (proposed in program plan) and, if necessary, work with PRO(s) to arrive at a list that can be approved; collect cost information from local governments; determine producers’ financial obligation and oversee reimbursement process (for collection)	Plan and implement recycling collection programs that meet new state requirements (including education); update franchise or license agreements to comply with new policies, including separating costs / payment for solid waste from recycling; work with state and PRO(s) to obtain reimbursement for recycling program costs	Collect material in accordance with contract with local government revised to reflect new requirements; deliver material to contracted MRF as defined in agreement	Provide service in accordance with state certification or permitting requirements from Scenario 1; compete for PRO(s) contracts and, if selected, comply with terms	Finance and manage recycling processing and marketing system and finance recycling collection, litter abatement and waste reduction/prevention, and upstream activities; develop program plan defining how obligation will be met; provide educational and outreach tools and resources to support Local Government educational programs; execute plan and report on results
Scenario 5 – Full Producer Responsibility with Optional Local Involvement	Regulate and oversee the system; expansion of authority matching that of Scenario 3; approve mandatory list of recyclables (proposed in program plan) and, if necessary, work with PRO(s) to arrive at a list that can be approved	No mandatory obligation. Could choose to opt-in to contract as collector for PRO(s)-managed program and could subcontract those services to a collection service provider	Contract either directly with PRO(s) or to a local government that is contracted with PRO(s); meet the collection program requirements defined by the PRO(s), in accordance with the plan approved by DEQ	Provide service in accordance with state certification or permitting requirements, from Scenario 1; compete for PRO(s) contracts and, if selected, comply with terms	Finance and manage recycling education, collection, processing and marketing, litter abatement, and waste reduction/prevention and upstream activities; develop a program plan defining how obligations will be met; execute plan and report on results
LCA = Life-Cycle Analysis EOL = End-of-Life PRO = Producer Responsibility Organization MRF = Material Recovery Facility DEQ = Oregon Department of Environmental Quality					

Five Scenarios: Financial and Operational Flows Compared

Group 1: Government Managed



Baseline – Current Oregon Framework

State sets program obligations on Local Governments who plan and develop programs. Ratepayers are the principle source of financing for collection and recycling, and service is provided predominantly through private collection service providers that are under contract with the local governments either through franchise or licensing agreements. Processing and marketing (post-collection) is not formally addressed in the framework, except for the state prohibition on disposal of source-separated recyclables.

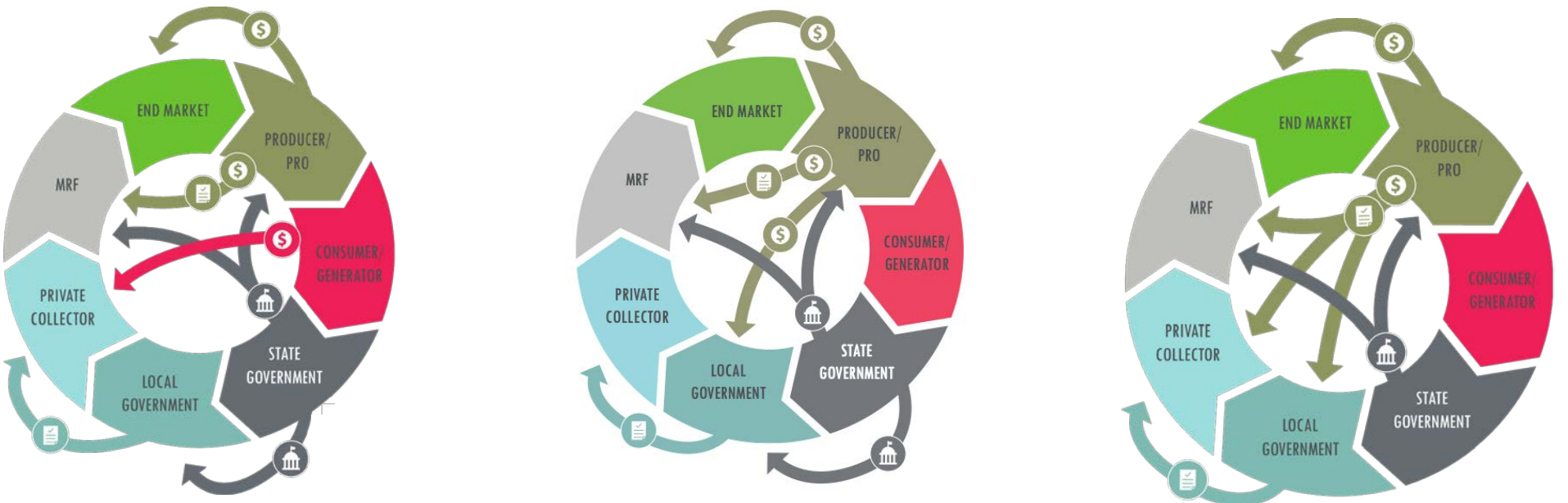
Scenario 1 – Enhanced Government Managed

State would have increased responsibility and authority to implement and enforce new program elements, such as parallel access to recycling collection (where waste is collected), a common statewide list of mandatory recyclables, and universal volume-based pricing of solid waste collection. MRFs would be subject to a certification or permitting program and reporting standards. Life-cycle assessment results would be integrated into end-of-life decision making, a multi-stakeholder Recycling Advisory Committee would be established, and there would be increased investment in infrastructure and end-market development. Additional funding would be required.

Scenario 2 – Enhanced State Managed with MRF Contracts

Includes all elements of Scenario 1. In addition, DEQ would enter into contracts with MRFs to allow collection service providers to deliver materials, pay no gate fee and receive a reimbursement for transportation costs. Additional legislation would be required to facilitate the contract terms necessary for this scenario to be practical, e.g., to allow for DEQ expenditure at a level greater than the current legislated limit, and / or to coordinate material flows. Significant additional funding would be required.

Group 2: Extended Producer Responsibility (EPR)



Scenario 3 – Post-Collection Producer Responsibility

Local governments would continue to manage recycling collection programs to meet state obligations, while the producers of designated recyclable materials would be required to manage and finance transportation, processing, and marketing of residential and commercially generated recyclables, as well as necessary recycling infrastructure investments. Producers would also be responsible for financing litter abatement and waste reduction/prevention and upstream activities. Processors would contract with and be funded by producers, and subject to state certification or permitting. Producers would likely meet their obligations by funding and participating in a producer responsibility organization (PRO). Fees into the PRO(s) would be based on a formula, informed by DEQ LCA research that incentivizes design for environment considerations (known as eco-modulation).

Scenario 4 – Producer Responsibility with Local Control

Producers would be required to manage and finance the post-collection part of the system, and finance litter abatement and waste reduction/prevention and upstream activities, just as in Scenario 3, and would also be financially responsible for recycling collection programs. Collection would continue to be managed by local governments, but ratepayers would no longer pay for those costs. Instead, program costs would be reimbursed by producers. Processors would contract with and be funded by producers, and subject to state certification or permitting. Obligations would likely be managed by a PRO(s) and would be funded through eco-modulated fees.

Scenario 5 – Full Producer Responsibility with Optional Local Involvement

Producers would be required to finance and manage the recycling system, including public education, collection, transportation, processing, and marketing of recyclables, as well as necessary recycling infrastructure investments. Producers would also be responsible for funding litter abatement and waste reduction/prevention and upstream activities. Producers would likely work through a PRO(s) to implement the program through a series of contractual arrangements with collectors and MRFs. Processors would contract with and be funded by producers and be subject to state certification or permitting. Local governments would no longer have operational responsibility, although they could choose to serve as collectors, through a contract with the PRO(s), in order to maintain a role in the system, if desired. In this case they would likely subcontract to a private collector. Local governments could also choose to opt out of the program altogether, which would result in operating as status quo with no funding received from the PRO(s).

Figure 2. Five Scenarios: Financial and Operational Flows Compared



FINANCING



OPERATIONAL / CONTRACTUAL



STRATEGIC/ REGULATORY AUTHORITY

Glossary of Terms

BACKGROUND CONCEPTS

Downstream – Actions and impacts that occur later in the life-cycle of a product. As viewed by a consumer, downstream actions are those associated with disposal or recycling of the product.

End-of-life – The point at which a product or material is no longer useful to the person possessing it and is either discarded or abandoned.

Externality – An economic cost to society, for example, the cost to society of illness or disability caused by pollution, that is not reflected in the price of the good or service that causes society to incur that cost.

Life-cycle Assessment – A standardized process used to estimate the environmental impact that a product or process has over the whole of its lifespan, including extraction of raw materials, production, transport, use, and disposal.

Materials Management – An approach to reduce environmental impacts by managing materials through all stages of their life. Materials management identifies impacts and actions across the full cycle of materials and products as they move through the economy—from raw material extraction to product design and manufacture, transport, consumption, use, reuse, recycling, and disposal.

Upstream – Those actions and impacts that occur earlier in the life-cycle. As viewed by a consumer, upstream impacts are those associated with extraction of raw materials, production, distribution, and sale of the product.

OREGON BASELINE

Franchise Agreement – An agreement issued by a local government unit authorizing a person or entity to provide solid waste management services in a designated area.

Opportunity to Recycle Act – As defined under ORS 459.005, Oregon's Opportunity to Recycle Act dictates that cities, counties, and metropolitan service districts of 4,000 or more in population must provide residents and businesses with the opportunity to recycle. This opportunity involves several elements drawn from a menu of options, including on-route collection of recyclables from single-family, multifamily and nonresidential waste generators, enhanced recycling education and promotion, and more.

EXTENDED PRODUCER RESPONSIBILITY

Extended Producer Responsibility (EPR) – A mandatory type of product stewardship that includes, at a minimum, the requirement that the producer's responsibility for its product includes post-consumer management of that product and its packaging. Oregon currently has EPR laws for beverage containers, electronics, paint, and pharmaceutical products.

Product Stewardship – Product stewardship is an environmental management strategy where all parties involved in the design, production, sale and use of a product take responsibility for minimizing the environmental impact throughout the stages of the product's life. The greatest responsibility lies with whoever

has the most ability to affect the product's life-cycle impacts. Stewardship can be either voluntary or required by law.

Product Stewardship Organization/Producer Responsibility Organization (PRO) – Usually a not-for-profit organization or an industry association designated by a producer or producers to act on their behalf to administer an extended producer responsibility or product stewardship program.

PRODUCT DESIGN

Design for Environment (DfE) – A methodology where products and packaging are designed to minimize their overall environmental and health impacts.

Design for Recyclability (DfR) – A methodology where products and packaging are designed to be recycled at end-of-life.

FINANCING

Collection Service Excise Tax – Assessed on recycling collection services, waste collection services, or both, the fee is paid by collection service customers, received by the collection service provider, and remitted to the state for a dedicated fund to improve recycling.

Generator Fee – Paid by waste generators, which could be collected as a separate line item on a property tax bill or as a specially-assessed fee (on its own bill).

Producer Fee – A fee brands and/or producers of packaging and other recyclables would be required to pay to the state, based on the amount of material they sell into the Oregon market. That fee could then be used to create a dedicated fund for recycling.

Retail Packaging Fee – Assessed at the point of sale and paid by the consumer, revenue from the fee would be remitted by the retailer to the state for the intended use. Such a fee has been used by a number of states to generate funds for government programs that address particular materials (e.g., scrap tires). Also known as “advance disposal fees” or “recycling fees.”

Recycling Gate Fee Surcharge – Assessed on recyclable materials delivered to MRFs for processing and paid by the collection service provider. This fee would be a set dollar per-ton amount that, depending on market revenues, sometimes leads to positive net gate fees and sometimes negative net gate fees.

Solid Waste Disposal Fee Surcharge – A per-ton fee on the disposal of waste that would be collected by a disposal facility and remitted to the state for a dedicated recycling fund.

EQUITY

Equity Standards – Standards that address the burdens and benefits of recycling through an equity lens. Issues addressed by these standards could include, but are not limited to: convenient, equitable access to recycling opportunities; facilities and their disproportionate impacts on certain communities; and minimum end-market environmental health and safety standards, in order to lessen or eliminate environmental justice burdens.

1. Enhanced Government Managed Scenarios

Scenario 1 – Enhanced Government Managed

Scenario 2 – Enhanced State Managed with MRF Contracts

1.1 Introduction

These two scenarios build upon the existing recycling framework in Oregon. They are intended to enhance state and local government-run recycling programs and more closely align them with the state’s 2050 Vision. Both do so by adding elements that strengthen relatively weak points in the framework, as identified in the gap analysis conducted by the Legal and Relational Frameworks subcommittee in April–May 2019, and in the evaluation of the existing Oregon framework when compared to the desired functions of an optimal system as defined by the Recycling Steering Committee (RSC). The identified gaps and weaknesses of the current system include, but are not limited to, a lack of system integration, limited ability to incorporate life-cycle considerations (especially in relation to impacting upstream product and packaging design), a lack of system harmonization, and a lack of well-defined responsibility in the post-collection part of the system, including the processing and marketing of recyclables.

Table 2. Common Elements and Application to Scenarios 1 and 2

- **Parallel access to recycling to expanded access to recycling collection**
 - New statutory requirements would specify that collection service providers incorporate recycling service for any customer that is receiving solid waste services, including single family residential, multi-family, commercial, and public space properties. Modeled on the current framework, the statute could require bundled services and variable rate pricing for all customers.
- **Mandatory variable rate pricing for services (i.e., pay as you throw, or PAYT) across all sectors (single family, multi-family, commercial) to incentivize waste prevention**
 - A new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services and ensure that they provide less expensive service for those who generate less waste.
- **MRF certification and reporting to improve environmental performance and transparency**
 - DEQ would exercise regulatory authority to develop a MRF certification or permitting program that would establish minimum operating and equity standards and reporting requirements.
 - In **Scenario 2, DEQ would enter into contracts with MRFs** to provide processing and marketing services. Such contracts would allow for greater ability to set standards, such as directing materials to end-markets that meet key performance criteria. DEQ would need expanded authority to undertake the contracting portion of Scenario 2.
- **Material-specific life-cycle assessment database to support decision making on end-of-life pathways**
 - DEQ would conduct LCA research and house the database. DEQ would use that database to recommend appropriate EOL pathways for the materials studied. The agency would be given authority, through a new statute, to develop a list of core recyclables based on the research, and to require that local programs follow agency guidance on appropriate EOL pathways.
- **Statewide list of recyclables, and a ban on disposal of those items, to provide consistency in programs across the state**
 - A new or revised statute would enable DEQ to establish the core list of recyclables based on the LCA research and grant the authority to ban those recyclables from disposal. A Recycling Advisory Committee would/could be created to advise on this process.
- **Recycled-content requirements and/or incentives to support recycling markets**
 - New statutory requirements would specify mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets. Alternatively, the statute could authorize DEQ to establish minimum recycled-content targets based on certain criteria, potentially including strength of markets and market values.

Common Elements and Application to Scenarios 1 and 2 Continued

- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety (EHS) standards**
 - An update to the statute would give DEQ the authority to set and enforce key performance standards. Local governments would be required to meet recycling collection targets, and to implement best practices to reduce contamination, either directly or through their collection service providers. MRFs would be required to meet inbound and outbound contamination targets, equity standards and applicable requirements related to end-market EHS standards. In addition, equity standards would guide DEQ decision making related to permitting / certification of MRFs and other relevant activities.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - The state would exercise existing authority related to false advertising claims to address products or packages labeled as “recyclable” but not able to be recycled in Oregon. It would also include new statutory authority to require consumer product manufacturers to label their products and packaging in accordance with the DEQ’s LCA-based guidance on end-of-life pathways.
- **Market development activities**
 - DEQ would utilize its existing authority to engage in market development activities on its own, and through collaboration with other state agencies. New resources, generated by the financing mechanism selected to accompany these scenarios, would be dedicated to market development activities. Such activities could include research and development efforts to test new markets for recyclables, and / or direct investment in for-profit or not-for-profit ventures that would utilize recycled materials.
- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

1.2 Summary

In *Scenarios 1 and 2*, local governments (cities/counties/regional governments) ensure the opportunity to recycle by establishing recycling collection services that meet specific requirements set by the state. Ratepayers are the principal source of financing for collection and recycling, and service is provided predominantly through private collection service providers who are under contract with the local governments either through franchise or licensing agreements.

In these scenarios, the state would have increased responsibility and authority to implement and enforce new program elements (see State Regulator in Section 1.5 Roles and Responsibilities) and local governments would be subject to additional requirements (see Local Government in Section 1.5 Roles and Responsibilities below). In addition, materials recovery facilities (MRFs) would be structurally integrated into the framework (see Processor in Section 1.5 Roles and Responsibilities).

Access to recycling collection would be enhanced in both of the scenarios given the added policies and program elements, including parallel access requirements that would ensure that recycling service is provided everywhere the collection of solid waste is offered, a harmonized statewide list of materials that must be recycled and are banned from disposal, and universal application of volume-based pricing to incentivize recycling and waste prevention.. These scenarios would address the need to improve the quality of the recycling stream by requiring local governments to implement best practices to reduce contamination.

In addition, as detailed in Section 1.5, both scenarios would:

- Require the integration of life-cycle assessment (LCA) data into local solid waste management planning and end-of-life (EOL) decision making.
- Establish operating and reporting standards for MRFs through a new certification, registration or permit program. These standards would address:
 - Processing requirements (e.g., removal of contamination and proper material sorting and grading).

- Equity factors.
- Utilization of responsible end-markets.
- Reporting and transparency.
- Enhance reporting requirements to provide transparency on costs and material flows.
- Increase investment in infrastructure and end-market development.

See Table 2, “Common Elements and Application for Scenarios 1 and 2”, for additional elements that could/would be included in this framework.

Scenario 2 builds upon these elements by requiring DEQ to enter into contracts with MRFs, to allow collection service providers to deliver materials, pay no gate fee at the MRF and receive a reimbursement for transportation expenses (i.e., from collection route or transfer point). The inclusion of transport costs reimbursement would provide cost parity for ratepayers in more remote communities, resulting in equal access to processing from all parts of the state. Additional legislation would be required to facilitate the contract terms necessary for this scenario to be practical, e.g., to allow for DEQ expenditure at a level greater than the current legislated limit, and to coordinate material flows.

Both scenarios would require additional funding. Potential sources are described in Appendix A. **Scenario 2 would require significant additional funding** beyond what would be needed for **Scenario 1**, given the prospective cost of the MRF contracts and related administration. The added MRF contracting expense would reduce costs to ratepayers, as the post-collection costs (MRF processing and transportation) are currently paid by collectors and funded through inclusion in collection rates.

1.3 Benefits

Scenarios 1 and 2 seek to maintain the strength of the current Oregon framework that provides strong public education and outreach as well as relatively stable and consistent collection. The expanded authority given to the state seeks to further enhance system optimization, integration and accountability, with an emphasis on the post-collection segments of the system (i.e., processing and end-market development).

The added emphasis on post-collection aspects is an effort to mitigate risk and uncertainty associated with volatile recycling commodity markets, while further defining responsible handling of materials as they flow downstream, addressing environmental health and safety (EHS) and equity standards related to processing and marketing of materials. These scenarios would also increase transparency of system costs and material flows and add funding and technical support for end-market development.

1.4 Tradeoffs and Challenges

While **Scenarios 1 and 2** represent less significant change with regard to recycling program management structures, they incorporate policy tools to strengthen the current framework to address key gaps. **Scenario 1** represents the most modest operational changes, since it focuses on enacting and implementing new policy, through the familiar structure of a local government-contracted, ratepayer-financed system. It would also have a more modest impact on system optimization in terms of meeting the functions defined by the RSC (see Table 3 and Table 5 for more detail). **Scenario 2** reflects a significant operational change to the processing system, although it would be managed by familiar players, most notably DEQ.

One of the most significant challenges in **Scenarios 1 and 2** is the need for additional funding, with a more significant need in **Scenario 2** to cover the cost of MRF contracts. As described in Appendix A, there are several options for financing government managed recycling system improvements, but each is challenging in its own way.

Scenarios 1 and 2 are limited in their ability to impact the upstream environmental impacts of the products and packaging that enter the recycling stream. They also do not effectively share responsibility among players in the recycling chain, a desired function, as defined by the RSC, since they do not effectively engage brands, retailers or recycling end-markets. **Scenario 1** could set some broad standards for end-markets but would have limited impact on downstream decision making, in terms of designating preferred markets and tracking the chain of custody, given limits in DEQ regulatory authority. The MRF contracting elements that distinguish **Scenario 2** would provide more tools to impact downstream market decision making around responsible EHS and equity standards, but could be challenging to implement, particularly if the path chosen involves significantly enhancing DEQ contracting authority, or direction of the flow of recyclables. This would require new legislation to grant DEQ expenditure authority to contract with MRFs and develop a new level of expertise within DEQ to negotiate and manage MRF contracts.

1.5. Government Managed Scenario Roles and Responsibilities

State Regulator (DEQ)

In **Scenarios 1 and 2**, DEQ would maintain the role it currently plays within the Oregon framework and would also obtain an expansion of policy and regulatory authority. In **Scenario 2**, **DEQ would play a more active role in the recycling marketplace by entering into contracts with MRFs** to ensure that recycling processing capacity is available to community programs in the state at no charge to them.

Core elements of the state's role in both **Scenarios 1 and 2** include:

- Undertake LCA research to determine optimal end-of-life pathways, by material type or category, and maintain a database of results.
- Integrate LCA research results into key agency policy and activities, such as evaluation and approval of local government plans.
- Develop environmental and social equity standards and incorporate them into agency permitting and decision-making activities. These standards could also be inserted into franchise agreements at the local level.
- Develop a common list of recyclable materials that must be collected in recycling programs across the state and which are banned from disposal.
- Implement new policies including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided.
 - Mandatory PAYT pricing for waste and recycling services for all commercial and residential generators.
- MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets, and equity requirements.
- Require local governments to implement recycling programs that meet policy objectives (See Section 1.8 Governance).
- Convene a Recycling Advisory Group to inform DEQ and provide a platform for discussing system needs and issues.
- Work with Business Oregon, or another established or newly created entity, to undertake research and development, infrastructure, and other end-market development activities, including grants, loans, and planning.
- Manage and coordinate strategic infrastructure planning with public grant making and other investments, including public-private partnerships.

The state's role in Scenario 2 would also include:

- Enter into contracts with MRFs to address the processing and marketing of recyclables generated within the state; contracts would require that MRFs accept recyclables from collection service providers, charge no gate fee, provide reimbursement for transportation costs, and market materials to end-market outlets that meet key criteria established by DEQ.

Local Government

As in the current framework, in **Scenarios 1 and 2**, local governments would have primary operational responsibility for implementing recycling collection programs. They would be required to:

- Plan and implement recycling programs that meet the following requirements:
 - Provide parallel access for recycling and waste collection for residents, businesses, and in public spaces.
 - Collect, at a minimum, the common list of recyclables.
 - Implement best practices to reduce contamination, as recommended by the Infrastructure research project.
 - Comply with cost and material flow reporting requirements.
 - Manage materials consistent with state guidance, based on LCA research.
- Execute recycling education, outreach, and enforcement efforts.
- Update franchise or license agreements to comply with new policy including parallel access, collection of the common list of recyclables, equity standards, and reporting and to require that collection service providers use state permitted, certified or contracted MRFs.

Collector

The collectors' basic role would be similar to the current framework in either **Scenario 1 or 2**, although their specific responsibilities would change as the requirements of their franchise or license agreements would be adapted to the enhanced policy environment. In this scenario, collectors would:

- Collect material in accordance with agreement / license with local government.
- Deliver material to permitted, certified or contracted MRF(s), as defined in franchise or license agreement.

Processor

Scenario 1 and 2 would structurally integrate MRFs into the framework through certification or permitting requirements that would establish operating and equity standards, reporting requirements and contamination targets.

Scenario 2 would further integrate MRFs into the framework through state contracts that would allow DEQ a stronger tool to establish and enforce newly-created operating and equity standards, reporting requirements, contamination targets, and end-market criteria, while providing equal access to processing for all state residents and mitigating risks and costs to local programs / ratepayers associated with market volatility. Processors would compete for state contracts, and, if selected, would comply with contract terms.

1.6 Financing

In **Scenarios 1 and 2**, the current ratepayer-financed collection system and its utilization of bundled variable pricing (i.e., pay as you throw or PAYT) would continue. The key difference in collection is that this approach

would be expanded to ensure that recyclables are collected wherever waste is collected (parallel access), including multi-family buildings, commercial properties, and public spaces. Given this requirement, the current ratepayer for solid waste bills in these venues would also pay for recycling.

Additional resources would be required to finance the new elements defined throughout this section. **A significantly greater level of resources would be required for Scenario 2**, given the potential cost of the MRF processing contracts and their administration. MRF processing is currently paid for through collection rates. In Scenario 2, these processing costs would increase to meet new standards and would be paid by the state as opposed to collection companies. The added MRF contracting expense would reduce costs to ratepayers, as the post-collection costs (MRF processing and transportation) are currently paid by collectors and funded through inclusion in collection rates. The inclusion of transport costs would provide cost parity for ratepayers in more remote communities, resulting in equal access to processing from all parts of the state. To meet those resource needs, Oregon could utilize one, or a combination, of the following financing mechanisms:

- **Solid Waste Disposal Fee Surcharge:** a per-ton fee on the disposal of waste from Oregon. It would be collected by the disposal facility and remitted to the state for a dedicated recycling fund. It would target all materials generated within the state (not out-of-state waste disposed of in Oregon), regardless of disposal location.
- **Recycling Gate Fee Surcharge:** assessed on recyclable materials delivered to MRFs for processing. It would be a set dollar per-ton amount that, depending on market revenues, sometimes leads to positive net gate fees and sometimes negative net gate fees. Like the disposal surcharge, this fee would be paid by the collection service provider, funded through fees paid by residential and commercial customers. The surcharge could be collected by MRFs, then remitted to the state for a dedicated recycling fund.
- **Generator Fee:** paid by generators, which could be collected in the following ways: as a separate line item on a property tax bill, as is done in Tompkins County, NY; or, as a specially-assessed fee (on its own bill) such as the Portland Arts Tax model or the Seattle model of an addition to the commercial business and occupation tax.
- **Collection Service Excise Tax:** assessed on recycling collection services, waste collection services or both; paid by the collection service customer (e.g., the resident or business), collected by the collection service provider, and remitted to the state for deposit in a dedicated fund to improve recycling. The State of Minnesota utilizes an excise tax, structured as a sales tax on municipal solid waste bills, to finance certain recycling activities.
- **Retail Packaging Fee:** assessed at the point of sale and paid by the consumer. Revenue from the fee would then be remitted by the retailer to the state for the intended use. These types of fees, commonly referred to as advance disposal or recycling fees, have been used by a number of states to generate funds for government programs to address particular streams (e.g., scrap tires). There are two precedents for using a retail recycling fee to finance curbside recycling programs and infrastructure: the Florida advanced disposal fee (ADF) on packaging, in place from 1993 to 1995, and the Hawaii ADF on glass, which places a \$.015 fee on non-deposit glass containers.
- **Producer Fee:** brands and / or producers of packaging and other recyclables could be required to pay a fee to the state, based on the amount of material they sell into the Oregon market. That fee could then be used to create a dedicated fund for recycling. RRS is not aware of any precedent for such a fee to be used to fund public-sector programs, though there have been reported legislative attempts in other states proposing such an approach. This mechanism, however, is typically used to fund PROs that manage EPR programs.

More details on each of these financing options are provided in Appendix A.

1.7 Operations

In **Scenarios 1 and 2**, collection service would continue to function similar to the current framework. Service would be arranged and implemented primarily through franchise or licensing agreements between local governments and private service providers, or, in limited instances, through direct local government services. In areas where franchise or license agreements do not include multi-family, commercial or public space properties, an expansion of those agreements or new licensing standards would be required to implement the parallel service requirement.

The franchise or licensing agreements would need to be updated to incorporate new program initiatives, as described above (see Section 1.5 Roles and Responsibilities-Local Government).

MRFs would be required to meet certification or permit requirements, and collection service providers would be required (through new policy and / or contract provisions) to deliver recyclables to certified or permitted MRFs.

In **Scenario 2**, in addition to meeting certification or permit requirements, MRFs would compete for state contracts. MRF contracts could be structured in a number of ways, depending on DEQ's contractual authority granted through new legislation, and the objectives of the contract. At a minimum, a contract between DEQ and a MRF would include the following provisions:

- A processing cost derived from a formula that is based on processing costs, material market values, and profit margin².
- A per-mile reimbursement of transportation costs based on the distance between the collection route or reload facility and the MRF.
- Minimum and maximum material acceptance capabilities, or processing cost variations based on quantity delivered (e.g., \$X per ton for 10,000 to 20,000 tons, \$Y per ton for 20,000 to 50,000 tons).
- Operating standards, including acceptable inbound and outbound material contamination rates.
- Equity standards.
- Criteria for acceptable material end-markets.
- Reporting and accountability for all of the above.

1.8 Governance

The governance model in **Scenarios 1 and 2** is similar to the current Oregon framework in that it relies primarily on DEQ to implement and enforce key elements. These scenarios add a multi-stakeholder Recycling Advisory Committee to advise the agency on key issues.

Local governments bear much of the responsibility for implementation of key elements of these scenarios. Their compliance with new elements would be regulated by DEQ. Franchise and license agreements would be a key tool for implementing this scenario.

The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to enable DEQ to implement the new elements of this scenario highlighted earlier in this section (e.g., core recyclables list and disposal ban, parallel recycling requirements, mandatory variable rate pricing). DEQ would extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

² The Joint Advisory on Designing Contracts for Recyclables, issued by [SWANA and NWRA](#), is a resource for this effort

In **Scenario 2**, **additional statutory authority would be required** for DEQ to enter into contracts with MRFs. This additional authority would need to address such issues as, if the value of contracts exceeds the agency's current contracting expenditure limits, or, if the structure required the direction of flow from certain municipalities to certain facilities.

1.9 Transitional Considerations

The transition to either **Scenario 1 or 2** could appear relatively seamless to some residents and consumers, for the most part, since there would be little change to the core approach to collection service provision, at least in some communities. The types of materials collected might change in some communities, and some classes of generators would receive new recycling opportunities as a result of the parallel access requirement. Generators would also be subject to a higher level of anti-contamination programming. Waste generators could see an increase in their rates to pay for expanded services. Further, the additional funding source needed would also impact waste generators. That funding source might appear to waste generators on their garbage bill, in property tax changes on their statement or at the retail level. Local governments would need to update their plans, programs and franchise or licensing agreements to comply with new requirements.

Collection service providers would need to transition their service offerings to comply with new agreements, and new statutory requirements (e.g., parallel service requirements). MRF operators would also be required to comply with new certification or permit requirements.

The most challenging element of the transition to Scenario 2 would be determining and implementing an appropriate structure for the contracts between DEQ and MRF operators, especially since additional statutory authority would be required. In any instance, the transition would significantly change the operating context of MRFs in the state, which have traditionally operated on the spot-market, as opposed to long-term contracts. The transition would also impact relationships between collection service providers and MRFs, particularly if the structure required that material flow be directed from communities to specific MRF contractors.

In order to achieve the potential benefits of this scenario, DEQ would need to maximize its use of current authority and new statutory authority would be required.

Table 3. How Do Scenarios 1 and 2 Relate to the RSC Desired Functions?

- 1. Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**
Partially addresses this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data. It would also reduce the impact of those materials required to contain higher levels of recycled content. **Scenario 2** would add to these elements by using contractual requirements to direct recyclables to end-markets that meet key criteria. However, depending on the funding source and amount, financial resources may be inadequate to recycle materials at an optimal level.
- 2. Resiliency: Resiliently adapts to changes in material supply and end-market demand**
Could be designed to promote resilience, if this function is considered when developing the process for adding / removing materials from the core list of recyclables, and when developing new regulations related to MRF operations. **Scenario 2** would allow the state to absorb the risk related to changes in end-market demand, and thus improve resiliency, if the state were allowed to build a reserve fund for contingencies.
- 3. Financing: Provides sustainable and equitable financing for stable operations and capital investments**
The financing mechanism chosen will determine the extent to which this scenario meets this function.
- 4. Integration: Integrates system components to achieve overall system goals**
Shows improvement over the current framework, as it suggests better integration of MRFs into the system, by setting mandatory minimum recycled-content standards and by creating additional focus on end-market development to integrate end-markets into the system. **Scenario 2** more fully integrates MRFs through contract provisions.
- 5. Upstream: Includes mechanisms to reduce upstream impacts of materials**
Has limited impact on upstream decision making, although requiring the use of recycled content will reduce the upstream impact of the products and packages subject to those mandates.
- 6. Equity: Designs for equity – examining the burdens and benefits across the state**
Addresses this function by requiring DEQ to establish equity standards and integrate those standards into permitting and decision-making activities, including MRF contracts in **Scenario 2**. DEQ also ensures that recycling collection service is provided across the state through parallel service requirements and there is equal access to processing from all parts of the state due to the reimbursement of transportation costs.
- 7. Shared Responsibility: Shares responsibility for the system among players, including residents and businesses, producers, state and local governments, and recycling industry**
Shares responsibility for the system among governments, residents and businesses, but not actively with producers.
- 8. Goals: Uses goals and metrics to measure progress and support ongoing improvement**
Does not directly incorporate goals but does include several elements that improve the ability for the state to achieve some of the goals in the 2050 Vision.
- 9. Education: Educates and encourages residents and businesses to use the system properly**
Relies on state and local government to educate residents and businesses to recycle properly.
- 10. Understanding Impacts: Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles**
Includes mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. Does not otherwise engage the public to understand the life-cycle impacts of materials.
- 11. Material Selection: Identifies beneficial materials acceptable for collection programs**
Addresses this function by establishing a process for developing a core list of recyclables, and by authorizing DEQ to create the core list of recyclables based on its LCA database.
- 12. Collection: Collects clean, acceptable materials for processing**
Retains one of the core strengths of the current framework – efficient recyclables collection. Also requires local governments to implement best practices to reduce contamination, which would improve the quality of the material collected.
- 13. Incoming Processing: Ensures processing facilities receive clean materials and in sufficient volumes**
By mandating a core list of recyclables, and banning them from disposal, the scenario improves the potential that facilities will receive sufficient quantities of materials for recycling. The contracts between MRFs and DEQ may also include provisions related to delivery of sufficient quantities. Requirements that local governments implement best practices to reduce contamination would improve the quality of incoming materials.
- 14. Outgoing Processing: Produces quality materials that reach end-markets**
The elements that improve incoming material quality (as noted above) will also improve outgoing material quality, and the inclusion of a MRF certification or permitting program could improve outgoing material quality through the operating standards imposed. The MRF contracts in **Scenario 2** would also incorporate processing standards to reduce contamination.
- 15. Downstream: Ensures materials are managed responsibly from collection through end-markets**
Additional reporting requirements would improve transparency, which may foster more responsible management. In **Scenario 2**, the MRF contracts would address this function by setting criteria for acceptable downstream markets.
- 16. Accountability: Ensures all players in the system perform responsibly**
The enhanced reporting required would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system.

2. Extended Producer Responsibility Scenarios

Scenario 3 – Post-Collection Producer Responsibility

Scenario 4 – Producer Responsibility with Local Control

Scenario 5 – Full Producer Responsibility with Optional Local Involvement

2.1 Introduction

These three scenarios rely on an extended producer responsibility (EPR) approach to manage the recycling system for packaging and printed paper collected from on-route or drop off collection services. Like the current frameworks in Oregon that manage collection and recycling of electronics and paint, and forthcoming pharmaceutical program, these scenarios would engage producers of packaging and printed paper (e.g., brand owners and retailers), as key players in the system by requiring that they provide either financial or operational program support. The degree of producer support and engagement is different in each scenario. The **EPR scenarios** provide new mechanisms to finance and integrate key system elements to optimize the system, while further aligning with the 2050 Vision.

Table 4. Common Elements and Application for Scenarios 3-5

- **Parallel access to recycling to expanded access to recycling collection**
 - In **Scenarios 3 and 4**, this element would be implemented through a requirement that collection service providers incorporate recycling service for any customer that is receiving solid waste services, including single family residential, multi-family, commercial and public space properties. Modeled on the current framework, the statute could require bundled services and pricing for all customers. In **Scenario 4**, producers would reimburse collection service providers or municipalities for those costs.
 - In **Scenario 5**, producers would be required to provide recycling service to single family, multi-family, commercial and public properties that is consistent with the level of solid waste service provided in their locality.
- **Mandatory variable rate (PAYT) pricing for services across all sectors (single family, multi-family, commercial) to incentivize waste prevention**
 - In all scenarios, a new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services that provides less expensive service for those who generate less waste.
 - In **Scenario 3**, the variable rate pricing mandate would only apply to solid waste and recycling collection services, since recycling transportation, processing and marketing costs would be the responsibility of producers.
 - In **Scenarios 4 and 5**, the variable rate pricing mandate would only apply to solid waste and organics collection services, since recycling collection, transportation, processing and marketing costs would be the responsibility of producers.
- **MRF certification and reporting to improve environmental performance and transparency**
 - In the **EPR scenarios**, like the publicly-managed scenarios, this element would be implemented through expanded DEQ regulatory authority, which would allow the agency to develop a MRF permitting program that would establish minimum operating and equity standards and reporting requirements.
- **Material-specific life-cycle assessment database to support end-of-life and design for the environment-based decisions**
 - In the **EPR scenarios**, DEQ would conduct LCA research and maintain a database of results. DEQ would use that database to recommend appropriate EOL pathways for the materials studied, and to guide decisions related to producer plan elements such as eco-modulated fees and the core list of recyclables.
- **Statewide list of recyclables and ban on disposal of those items to provide consistency in programs across the state**
 - In **Scenario 3**, a new or revised statute would enable DEQ to establish the core list of recyclables in consultation with producers and local governments and grant the authority to ban those recyclables from disposal based on the LCA research and its recommendation of an optimal EOL pathway.

Table 4. Common Elements and Application for Scenarios 3-5 Continued

- In **Scenarios 4 and 5**, producers would propose a core list, and DEQ would approve that list, based on consistency with its LCA research.
- **Recycled-content requirements and/or incentives to support recycling markets**
 - The eco-modulated fee structure would incentivize the use of recycled content. In addition, the authorizing statute could set new requirements to implement this element by either specifying mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets, or authorizing DEQ to establish minimum recycled-content targets based on certain criteria, including strength of markets and market values.
- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety standards**
 - The authorizing statute would give DEQ the authority to set and enforce key performance standards for producers, including material-specific recycling rates, contamination rates and equity and end-market EHS standards. In addition, equity standards would guide DEQ decision making related to permitting / certification of MRFs.
 - In **Scenarios 3 and 4**, local governments would be required to meet recycling collection targets, and to implement best practices to meet inbound contamination targets, either directly or through their collection service providers.
 - In **Scenario 5**, producers would be required to meet recycling collection targets, and to implement best practices to meet inbound contamination targets, either directly or through their collection service providers.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - Like the publicly-managed scenarios, in the **EPR scenarios**, the state would exercise existing authority related to false advertising claims to address products or packages that are labeled as “recyclable” but are not able to be recycled in Oregon. New statutory authority would allow the state to require consumer product manufacturers to label their products and packaging in accordance with the DEQ’s LCA-based guidance on end-of-life pathways. In addition to, or as an alternative, such labeling standards could be incentivized in the eco-modulated fee structure.
- **Market development activities**
 - Producers would be required to set aside a portion of the producer responsibility organizations’ budget(s) and collected fees to invest in market development activities.
- **Addressing litter and upstream**
 - Establish requirements on producers to fund litter abatement and waste reduction/prevention and upstream activities.
- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

2.2. Summary

In **all EPR scenarios**, **specific producer obligations would be established in authorizing legislation**. The obligations differ between the three **EPR scenarios** considered. Producers would likely comply through participation in one or more producer responsibility organizations (PROs), which would develop a program plan, set and collect fees from producers sufficient to fund the plan, and execute the plan. The authorizing legislation would also set additional requirements on other players in the system, including parallel access collection requirements, volume-based pricing mandates, effective sorting requirements on processors and EHS requirements of end-markets. Importantly, all of the **EPR scenarios** require producers to reduce upstream (pre-consumer) environmental impacts (for example, through disclosure and reduction of life-cycle impacts) and to provide financial support for litter abatement and waste reduction/prevention, in addition to recycling program costs, in order to capture the full spectrum of programs required to address the impacts of their products and packaging on the environment.

Scenarios 3 and 4 integrate the current framework's collection system into an EPR approach, by requiring producer responsibility for the post-collection segments of the recycling system (e.g., material processing and marketing). In these scenarios, local governments would continue to manage recycling collection programs, while the producers of designated recyclable materials would be required to manage transportation, processing, and marketing of residential- and commercially-generated recyclables, and to finance any costs of those services. This presumably would be done through contracts with MRFs.

In **Scenarios 3 and 4**, collection would continue to be organized as it is in the current Oregon framework, where local governments (cities/counties/regional governments) ensure the opportunity to recycle by establishing recycling collection programs that meet specific state requirements. Service would continue to be provided predominantly through private service providers under franchise or licensing agreements. As in **Scenarios 1 and 2**, collection would be enhanced through parallel access requirements that would ensure that recycling service is provided wherever solid waste service is offered. And, local governments would be subject to additional obligations, including implementing best practices for education, implementing contamination reduction, and other activities.

The key difference between these two scenarios is in the financing of the local recycling collection programs. In **Scenario 3**, the recycling collection costs would continue to be funded by ratepayers/customers, while the transportation, processing and marketing would be funded by producers. **Scenario 4** places financial responsibility for collection and public education, as well as processing and marketing, on producers. Producers would cover the post-collection costs through MRF contracts, as discussed above, and would reimburse local governments or collection service providers for the cost of implementing recycling collection, education and litter programs.

Scenario 5 represents the broadest approach to EPR presented. It requires producers to finance *and* manage the entire recycling system for obligated recyclables, including public education, collection, transportation, processing, and marketing of recyclables, as well as necessary recycling infrastructure investments, litter abatement and waste reduction/prevention and upstream activities. Producers, through a PRO(s), would implement a comprehensive recycling program through a series of contractual arrangements with collectors and MRFs. Local governments would no longer have operational responsibility or authority over their programs, although they could choose to serve as collectors, with the authority to assign collection duties to franchised or permitted private collectors as subcontractors. In this case, local governments would serve as contractors to the PRO(s), in order to maintain a role in the system.

In **all EPR scenarios**, the authorizing legislation would require producers, individually, or through participation in one or more PRO(s), to submit a program plan defining how they would meet their obligations. DEQ would have regulatory oversight through negotiation and approval of the plan, and periodic reviews, to ensure that the obligations are being met and could undertake enforcement. DEQ could convene a Recycling Advisory Committee to advise this process. Producers would also be responsible for financing new system elements related to DEQ administration and LCA research. As such, the additional funding sources required for **Scenarios 1 and 2** would not be necessary.

In **all EPR scenarios**, the producer fee structure would incorporate eco-modulation to incentivize design for environment (DfE) standards for product and packaging design. Eco-modulation adjusts the fees paid by brands and retailers to reward attributes such as recyclability, use of recycled content, or other aspects of DfE, and to penalize the design of problematic packages or products. Eco-modulation would reflect the results of DEQ's life-cycle assessment research.

2.3. Benefits

In **Scenarios 3 and 4**, the current collection system remains largely intact, thus these scenarios would leverage the relative strengths of that element of the existing framework. The current collection system would be

further improved and integrated into the larger recycling system through the inclusion of any of the additional common elements, such as, parallel access to recycling, mandatory PAYT, a statewide list of recyclables and generator-facing contamination reduction programming.

All EPR scenarios enhance system optimization, integration and accountability by designating a responsible party for the post-collection segments of the recycling system (i.e., processing and end-market development). In these systems, producers tend to approach the recycling system as a supply chain, creating incentives for improved material quantity and quality among all participants.

In **all EPR scenarios** assigning responsibility for the post-collection system mitigates the risk and uncertainty associated with volatile recycling commodity markets and ensures an end-market for collected materials. EPR systems can also facilitate responsible handling of materials as they flow downstream, increasing transparency of system costs and material flows and adding funding and technical support for end-market development. Reimbursement of collector-to-processor transportation costs (similar to **Scenario 2**) would provide more equitable recycling access to all Oregonians regardless of their proximity to processing facilities. In addition, EPR fee structures can incentivize upstream design changes and DfE choices for packaging producers.

Scenarios 3, 4 and 5 would address one of the key challenges to **Scenario 2** – DEQ’s ability to fund and manage MRF contracts – by placing those responsibilities on producers (i.e., brands and retailers), through the use of a PRO(s).

2.4. Tradeoffs and Challenges

Scenarios 3, 4, and 5 represent a significant philosophical and operational shift in the approach to managing recycling within the state. Bringing producers, and their resources into the framework, as **Scenarios 3, 4, and 5** describe, will change business relationships and the industry dynamic and discourse. Implementation of the **EPR scenarios** would require building trust and understanding among the stakeholders on all sides. DEQ and a newly formed Recycling Advisory Committee would be in an important position to facilitate any such transitions and ensure that all voices are heard in the process.

EPR, on its own, does not address certain key functions, such as education and public engagement to understand the costs of recycling, although these scenarios address those shortcomings by pairing EPR with a strong public policy base.

Scenario 5 would require local governments to step back from their traditional role in financing and managing recycling programs but would allow them to continue to participate as service providers, if they choose, or to opt out altogether.

2.5. EPR Scenario Roles and Responsibilities

State Regulator (DEQ)

In **all EPR scenarios**, DEQ would maintain all of its current responsibilities and also assume the following ones:

- Negotiate and approve the producer program plans, review annually, and enforce if necessary, to ensure that the plan(s) meets statutory obligations and are aligned with the 2050 Vision.
- Conduct LCA research to determine optimal end-of-life pathways, by material type or category, maintain a database of results, and define factors to be used for eco-modulation in fee setting.
- Develop equity standards and incorporate into agency permitting and decision-making activities.
- Implement new policies, including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided.

- Mandatory variable rate pricing for waste and recycling services for all commercial and residential generators.
- Set MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets, and equity requirements.
- Convene a Recycling Advisory Group to inform the agency and provide a platform for discussing system needs and issues.
- Coordinate and oversee the use of producer-provided funding for litter abatement, waste reduction/prevention, and potentially upstream activities. Much of this funding would likely be allocated to grants and/or contracts, for example, to reimburse local governments or other organizations for litter abatement efforts, or to fund waste prevention and reuse projects.

In Scenarios 3 and 4 only:

- Require local governments to implement recycling collection programs that meet policy objectives (see below).

In Scenario 3 only:

- Work with producers and local governments to develop a common list of recyclable materials that must be collected in recycling programs across the state.

In Scenario 4 only:

- Collect cost information from local governments, determine producers' financial obligation for collection programs, including educational and promotional activities, and oversee reimbursement process.

Producers (i.e., Brand Owners and Retailers)

In *all* **EPR scenarios**, producers of packaging and printed paper (i.e., brands and retailers) would be required to manage the recycling processing and marketing system. Producers would work through one or more producer responsibility organizations to meet their obligations. The PRO(s) would be required to:

- Establish a fee structure that meets DEQ objectives, based on LCA research and DfE objectives.
- Report annually on program performance, fee structure and material flows.
- Implement research and development, infrastructure and end-market development activities, as necessary.
- Fund litter abatement and waste reduction/prevention and upstream activities.
- Develop a five-year program plan, though what's addressed within that plan would/could change based on the scenario and level of producer involvement chosen (see below).
- All program plans would include the following:
 - The approach to agreements with MRFs, including inbound and outbound contamination targets and acceptable end-markets.
 - Producer fee structure.

In Scenarios 3 and 4 only:

- Provide recycling processing and marketing services sufficient to manage residential and commercial recyclables in the state. Producers would contract with MRFs for processing, marketing and transportation, so that collection service providers could deliver recyclables to facilities, pay no gate

fee, and receive a transportation reimbursement (a per-mile payment based on the number of miles from the collection route).

- Provide education and outreach tools and resources to local governments, businesses and collection service providers.

In Scenario 4 only:

- Five-year program plan would also include the approach to reimbursement of local government and collection service provider recycling costs.

In Scenario 4 and 5

- Five-year program plan would also include a proposed core list of recyclable materials designated for collection and recommended for ban from disposal. It should be noted, though, that in Scenarios 4 and 5, the PRO(s) would propose the list of recyclables designated for collection but that DEQ would be the entity to approve that list, potentially with the assistance of a Recycling Advisory Committee.

In Scenario 5 only:

- Five-year program plan would also include:
 - Material-specific recycling targets and how they will be met.
 - The approach to agreements with collectors, including contamination targets and best practices to reduce contamination.
 - Other provisions required by DEQ.
- Provide recycling collection services to all single family, multi-family, commercial, and public space properties co-located and commensurate with the solid waste services at those properties.
- Provide recycling processing and marketing services sufficient to manage residential and commercial recyclables in the state by contracting with MRFs for processing and marketing.
- Execute education and outreach programs targeting residents, businesses and collection service providers.

Local Government

In **Scenarios 3 and 4**, local government's role would be similar to that in the current Oregon framework, as they would continue to have primary operational responsibility for implementing recycling collection programs. However, the specifics of those responsibilities would be adapted to the enhanced policy environment. Local governments would be required to:

- Plan and implement recycling programs that meet the following requirements:
 - Parallel access for recycling and waste for residents, businesses and in public spaces.
 - Collect only the common list of recyclables and deliver to processors consistent with the PRO(s) plan(s).
 - Implement best practices to reduce contamination.
 - Comply with cost and material flow reporting requirements.
 - Manage materials consistent with state guidance, based on LCA research.
- Execute education, outreach and enforcement efforts related to collection.
- Update franchise or license agreements to comply with new policy including parallel access, collection of the common list of recyclables, and reporting, and to require that collection service providers deliver materials in accordance with the PRO(s) plan(s).

In **Scenario 5**, each local government could choose to have no role in the recycling program or could choose to serve as a collector for the producer-managed program. If a local government chooses to participate, it would enter into an agreement to provide collection services to the PRO(s). It could then subcontract those services to a collection service provider.

Collector

In **Scenarios 3 and 4**, the collectors' basic role would not change from the current framework, although their specific responsibilities would adapt to the requirements of their franchise or license agreements as adjusted to reflect the enhanced policy environment. In this scenario, collectors would:

- Collect material in accordance with contract with local government.
- Deliver material to a MRF(s), as defined in franchise or license agreement.

In **Scenario 4**, collectors would no longer bill customers for recycling collection service, as those costs would be reimbursed by the PRO(s).

In **Scenario 5**, collectors would either contract either directly with the PRO(s), with a local government who contracted with the PRO(s) or with a local government that has completely opted out of the system. In the first two instances, the collector would be required to meet the collection program requirements defined by the PRO(s), in accordance with the plan approved by DEQ. If a local government opts out of program responsibility, the PRO(s) would be free to contract with any collector. If a local government opts out of the system entirely, collectors would contract with local governments consistent with new policy requirements (e.g., parallel access to recycling and PAYT).

Processor

All EPR scenarios would structurally integrate MRFs into the framework through agreements with the PRO(s), and via certification or permitting requirements that would establish operating and equity standards, reporting requirements, contamination targets and end-market criteria. In these scenarios, MRFs would:

- Provide service in accordance with the PRO(s) contract(s).
- Comply with state regulatory / reporting standards defined in certification or permit.

2.6. Financing

In **Scenario 3**, the current ratepayer-financed collection system and its utilization of bundled variable pricing (PAYT) will continue. However, ratepayers would no longer pay (through rates) for the costs of the post-collection system, as those costs would be paid for by the producers. The key difference in collection is that this approach would be expanded to ensure that recyclables are collected wherever waste is collected, including multi-family buildings, commercial properties and public spaces. As such, the current ratepayer for solid waste bills in these venues would also pay for recycling collection service.

Scenarios 4 and 5 would be fully financed by producers, through one or more PRO(s), as defined in the legislation. Ratepayers would continue to pay for solid waste collection and disposal, while producers would cover the cost of recycling education, collection (including carts), and transportation, processing and marketing of recyclables.

In **Scenario 4**, local governments would continue to set rates for collection services through franchise or licensing agreements, however, ratepayers would only pay the portion of the rate that related to solid waste and organics collection and disposition. The cost of recycling would be split out and reimbursed by the PRO(s), through DEQ. The local government would report its cost to DEQ who would then direct the PRO(s) to reimburse the local government or the collection service provider. DEQ would review local government

submissions to ensure they are reasonable and that no errors have been made. The solid waste fees paid by ratepayers would be based on variable rate pricing (i.e. PAYT).

In **Scenario 5**, producers would be responsible to fund and manage recycling collection services through contracts with service providers. Local governments that opt to contract with the PRO(s) as collection service providers could then subcontract with private collectors to execute the contractual requirements.

In **all EPR scenarios**, producers would finance and coordinate the transportation, processing and marketing of recyclables post-collection, as well as research and development, infrastructure and end-market development, with research and development, infrastructure, and end-market development projects being financed by the PRO(s) through a set percentage of the PRO(s) budget. Producers would also fund litter prevention and control, waste reduction/prevention and upstream activities. The program plan might designate activities planned to utilize those funds, when implementation of those activities is the responsibility of the producers (e.g., upstream impact reduction activities).

In **all EPR scenarios**, the PRO(s) would be responsible for funding additional administrative oversight, and LCA research performed by DEQ to inform EOL decision making and factors for setting eco-modulated fees. The level of funding required for these tasks, and the mechanism for transferring that funding, would be either set in the statute, or negotiated as a part of the program plan.

In **all EPR scenarios**, each producer would pay fees into a PRO(s), which would be responsible for meeting the statutory obligation. The fees assessed by the PRO(s), and paid by producers, would utilize an eco-modulated approach, such that discounts would be given to materials that meet recycling and DfE objectives, as defined by DEQ research. Penalties will be paid for materials that disrupt the recycling system or have high environmental impacts. This would result in different per-unit costs for different materials and packaging formats based on their environmental impact and impact to the recycling system. This would provide clear feedback to producers to incentivize DfE considerations, such as clean production and supply chain practices, detoxification, decarbonization, reduction in material inputs, use of recyclable materials, and incorporation of recycled content. The eco-modulated rate schedule would be a part of the program plan subject to approval by DEQ.

2.7. Operations

In **Scenarios 3 and 4**, collection service would continue to function similar to the current Oregon framework. Service would be arranged and implemented primarily through franchise or licensing agreements between local governments and private service providers or provided directly (in limited instances). In areas where franchise or license agreements to do not include multi-family, commercial or public space properties, an expansion of those agreements, or new service agreements, would be required to implement the parallel service requirement. In both scenarios, franchise or licensing agreements would need to be updated as described above (see Local Government Responsibilities).

In **all EPR Scenarios**, collection systems could also include drop-off collection. This service could recognize materials that are also designated for curbside collection, as well as items such as plastic film and Styrofoam that are not conducive to on-route collection. Drop-off collection could be a complement to an established curbside collection program or established as a stand-alone collection option in areas where no curbside solid waste collection is provided.

In **Scenario 4**, the PRO(s) would define certain operational provisions within the program plan, which would be incorporated into contracts between the PRO(s) and local governments, and between local governments and their collection service providers. Such provisions would likely include the core list of acceptable materials; public education and best practices to combat contamination; pre-approval for significant program changes; and instruction on which MRF(s) should receive collected materials. The franchise or

licensing agreements would need to be updated to incorporate these conditions, as well as other new requirements as described above (see Local Government Responsibilities).

The PRO(s) / local government agreements would include other provisions defining terms for reimbursement, which could include conditions such as a cap in per-household cost, pre-approval for program investments, or penalties for high inbound contamination rates. All such conditions would require approval from DEQ as a part of the program plan and could include review by a Recycling Advisory Committee through the plan approval process. Local governments would report program costs to the state, which would determine the financial obligation of the PRO(s).

In **Scenario 5**, producers would manage the collection and processing system through contractual agreements. Local governments would no longer have direct authority or the obligation to design and implement recycling programs.

To operationalize its collection responsibility, the PRO(s) would directly contract for collection services. Local governments would have first right of refusal to act as a collector, under contract with the PRO(s); they could then subcontract to private collection service providers. The template of the contract between the PRO(s) and local governments would be a part of the program plan, thus would be reviewed and approved by DEQ. It would likely include a pre-determined, per-household compensation rate based on key cost factors such as size and geography of a community. The compensation rate would likely be determined through an independent, PRO(s)-commissioned study of program costs in the state, and would be included in the program plan, requiring DEQ approval. This could be revisited periodically to adjust to changing conditions.

Franchise or license agreements would continue to govern solid waste and organic waste (yard and food waste) collection and disposition and could continue to include recycling services if a local government chose to serve as a collector for the PRO(s).

If the local government elects not to engage in collection, the PRO(s) would likely conduct an open solicitation for collection service in that community, defining the scope of work as needed to achieve the objectives of the program plan. In this case, there would be no bundling of recycling with solid waste services. Recycling would be split off and handled separately between the PRO(s) and private service provider(s).

In either instance, like all the scenarios, solid waste service would be required to use variable rate pricing.

In **all EPR scenarios**, the PRO(s) would contract with the MRF(s) to process and market program material. The contracts would set quality standards (inbound and outbound contamination rates) and specify end-market EHS standards. **Scenarios 3 and 4** would include a requirement that collection service providers be reimbursed for transportation costs on a per-mile basis, based on the distance from a collection route. As such, the contracts would allow collection service providers to deliver materials with no gate fee and have their transportation costs covered, to ensure cost-equivalency in all parts of the state.

2.8. Governance

In **all EPR scenarios**, the DEQ would oversee producer implementation of their plans, and enforce as necessary. It would also extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

In **Scenarios 3 and 4**, the governance model is similar to the current framework in that it relies primarily on DEQ to implement and enforce core elements, and local government implementation through collection. Local governments' approach to compliance with new elements would be regulated and approved by DEQ. Franchise and license agreements would be a key tool for implementing the collection elements of these scenarios. The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a

separate statute, would be required to enable DEQ to implement the new elements of these scenarios highlighted earlier (e.g., core recyclables list and disposal ban, parallel recycling requirements, mandatory variable rate pricing, contamination reduction programming).

In **Scenario 3**, DEQ would be required to consult with producers and local governments to determine the materials to include on a statewide list of recyclables that would be required to be collected for recycling and banned from disposal. Additional statutory authority would be required to assign responsibility for processing and marketing of recyclables to producers, and to implement additional program requirements (e.g., litter abatement costs, infrastructure and market development activities, waste reduction/prevention, and upstream activities).

In **Scenario 4**, additional statutory authority would be required to assign producers responsibility for processing and marketing of recyclables and financial responsibility for systemwide recycling, litter abatement and waste reduction/prevention and upstream activities, and to implement additional program requirements (e.g., infrastructure and market development activities).

In **Scenario 5**, the governance model continues to rely on DEQ to implement and enforce key elements but shifts responsibility to the producers for management and execution of key programs and activities. Additional statutory authority would be required to assign producers financial and operational responsibility for recycling, litter abatement and waste reduction/prevention and upstream activities, and to implement additional program requirements. (Responsibility might be limited to financial responsibility for certain activities, such as litter abatement and waste prevention.) The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to assign producers responsibility for providing recycling opportunities, and to enable DEQ to implement the new elements of this scenario highlighted previously (e.g., disposal bans, and mandatory variable rate pricing). Material flows and costs would be tracked through PRO(s) reporting responsibilities. Local governments would bear no responsibility for recycling program implementation, unless they chose to provide collection and education services to the PRO.

In **all EPR scenarios**, the authorizing legislation would define key elements in the producers' governance structure. For example, the legislation would authorize either one PRO, or multiple PROs. It could also define whether the PRO(s) should be not-for-profit, or for-profit, and what the board structure would be (e.g., only producers vs. producers and other stakeholders).

All EPR scenarios require producers and / or their PRO(s) to develop and execute a program plan. The plan would present critical details of program implementation, finance and operations and would be submitted by the PRO(s). DEQ would retain ultimate governance over the programs, with regulatory oversight and enforcement authority over the producers through the program plan approval and review process, to ensure the producers meet their statutory obligations.

The program plan(s) for **Scenario 3** would include:

- Provisions of agreements with MRFs, including standards for inbound and outbound contamination and end-markets.
- Provisions of transportation reimbursement for inbound materials delivered to a MRF.
- A fee structure that incorporates DEQ guidance on factors reflected in eco-modulation.

The program plan(s) for **Scenario 4** would include:

- Material-specific recovery targets and plans to meet them.
- The list of acceptable recyclables.
- Provisions of reimbursement agreements with local governments, including contamination standards.

- Provisions of agreements with MRFs, including standards for inbound and outbound contamination and end-markets.
- A fee structure that incorporates DEQ guidance on factors reflected in eco-modulation.

The program plan(s) for **Scenario 5** would include:

- Material-specific recovery targets and plans to meet them.
- The list of acceptable recyclables.
- Provisions of agreements with collectors, including contamination standards.
- Provisions of agreements with MRFs, including standards for inbound and outbound contamination and end-markets.
- A fee structure that incorporates DEQ guidance on factors reflected in eco-modulation.

All **EPR scenarios** could add a Recycling Advisory Committee to advise the agency on key issues.

2.9. Common Elements Recommended for All EPR Models:

- Scope of obligated materials.
 - For any of **the EPR scenarios**, the enabling legislation would need to define obligated producers based on a scope of obligated materials. Typically, EPR programs include packaging only, packaging and printed paper (to include junk mail, newspapers, etc.), or packaging, printed paper and like products (including things like resealable bags, or aluminum foil trays that may or may not have been packaging before disposal). Given that it is likely that collection programs already include products that are similar to packaging, Oregon may want to consider including printed paper and like products. Furthermore, consideration should be given to LCA data in developing the list of obligated materials.
- Producers would be required to address litter abatement as well as recycling. The mechanism for addressing litter differs in each scenario. In **Scenarios 3 and 4**, producers would finance litter abatement, though addressing litter abatement would be handled by local or state government. In **Scenario 5**, producers would have financial and operational responsibility for litter abatement.
- Producers would be required to finance waste reduction/prevention efforts, potentially through a fund to be administered by DEQ to support local implementation.
- Regulatory authority defines optimal EOL pathway.
 - To ensure the EPR programs are designed with life-cycle impacts in mind, DEQ would be granted authority to designate the appropriate end-of-life pathway for each material type or category based on life-cycle analysis data.
- Eco-modulated fees are set by PRO(s) but informed by regulatory authority based on LCA / DfE factors.
 - To capture the potential benefit of reducing upstream impacts through EPR, it is imperative that eco-modulated fees are used to incentivize better material use and product or package design. In all scenarios, the eco-modulation formulas would be guided by LCA data, as defined by DEQ.
- Producers would be required to finance and implement upstream (pre-consumer) impact reduction efforts, potentially subject to standards set by DEQ, or proposed by the PRO(s) and approved by DEQ. Impact reduction efforts could include, as example, the disclosure of life-cycle environmental impacts, detoxification, decarbonization, or other design, supply chain, and/or production changes that reduce environmental impacts.
- Mechanism for investment / coordination in infrastructure and market development.

- PRO(s) would invest in infrastructure and end-markets by allocating a portion of the producer fees to these activities.
- Education and outreach clearly defined and educational resources provided by the PRO(s).
 - Responsibility for developing educational resources would be on the producers, while the education and outreach responsibilities vary in each scenario. In **Scenarios 3 and 4**, local governments would be responsible for implementing education programs. In **Scenario 5**, producers would have that responsibility, though the PRO(s) could partner with local governments on educational outreach efforts.

2.10. Transitional Considerations

In **Scenarios 3 and 4**, the transition could appear relatively seamless to some residents and consumers, for the most part, since there would be little change to the core approach to collection service provision, at least in some communities. However, the list of materials accepted for collection could change and generators would be subject to a higher level of anti-contamination programming. Further, some classes of generators would receive new recycling opportunities as a result of the parallel access requirement. Local governments would need to update their plans, programs, and franchise or licensing agreements to comply with new requirements. In **Scenario 4**, this would include provisions of local government contracts with the PRO(s) (or DEQ) for reimbursement.

Collection service providers would need to transition their service offerings to comply with new agreements and new statutory requirements (e.g., parallel service requirements). MRF operators would also be required to comply with new certification or permit requirements.

One of the more significant transitional considerations in **all EPR scenarios** would be the transfer of responsibility for processing agreements from collection service providers to producers. The transition would significantly change the operating context of MRFs in the state, which have traditionally operated on the spot market, and through agreements with individual collection service providers. In these scenarios, MRFs would enter into longer-term contracts with the PRO(s). The transition would also impact relationships between collection service providers and MRFs, particularly if the PRO(s) designated that material flow be directed from communities to specific MRF contractors, to ensure appropriate distribution of materials and allow for matching flows to capacity.

Implementing the producers' financial responsibility for collection in **Scenario 4** would require a new mechanism for cost reporting and reimbursement for local governments. Franchise agreements would need to separately account for the costs of recycling collection and, where applicable, education, litter abatement and best practices to reduce contamination. Those costs would then need to be submitted to DEQ for reimbursement by the PRO(s). Franchise agreement structures may need to be adjusted to allow for that reimbursement, either to the local government or directly to the collection service provider.

The transition to **Scenario 5** could be apparent to residents and consumers, since assigning collection responsibility to producers may mean a change in service providers for residential and commercial customers. Collection service providers would need to transition their service offerings to comply with new agreements with the PRO(s), either through local governments, or directly. MRF operators would also be required to comply with new certification or permit requirements, and contractual agreements with the PRO(s). Transitioning to producer responsibility for collection would require updates to franchise agreements, particularly in cases where the local government opts out of providing recycling collection services. In those cases, the franchise agreements would cover only solid waste and, if available, yard debris/food waste collection and disposal.

In order to achieve the potential benefits of these scenarios, DEQ would need to maximize its use of current authority, and new statutory authority would be required.

Table 5. How Do Scenarios 3, 4, and 5 Relate to the RSC Desired Functions?

- 1. Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**

The *EPR scenarios* address this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data and by engaging producers to share responsibility in the recycling system. It would also incentivize the reduction of upstream impacts of the materials in the waste stream through the use of eco-modulated fees. Added financing and the provision of guaranteed end-markets would allow for a higher overall level of recovery, further optimizing benefits.
- 2. Resiliency: Resiliently adapts to changes in material supply and end-market demand**

The *EPR scenarios* significantly improve resiliency, as they ensure that producers absorb the risk related to changes in end-market demand, thus stabilizing the collection and processing system. The scenarios could be further designed for resiliency, if this function is considered when developing the process for adding / removing materials from the core list of recyclable materials, and when developing new implementing regulations related to MRF operations.
- 3. Financing: Provides sustainable and equitable financing for stable operations and capital investments**

The *EPR scenarios* meet this function by providing a stable, consistent and enforceable financing mechanism. In *Scenario 3*, producer financing for transportation, processing and marketing is paired with ratepayer financing for collection. This presents a more diverse pool of funding than the other scenarios. In *Scenarios 4 and 5*, producer financing covers collection, transportation, processing and marketing.
- 4. Integration: Integrates system components to achieve overall system goals**

The *EPR scenarios* meet this function by better integrating MRFs into the system, by engaging producers, and by creating additional focus on end-market development to integrate end-markets into the system. In *Scenario 3*, DEQ plays a critical role in system integration, by coordinating the responsibilities of local governments and producers. In *Scenarios 4 and 5*, the PRO(s) is more actively focused on system integration, as they take on full financial responsibilities.
- 5. Upstream: Includes mechanisms to reduce upstream impacts of materials**

The *EPR scenarios* incorporate eco-modulated fees, which would serve as a tool to incentivize reduced upstream impacts of materials. Producers would fund waste reduction/prevention efforts, and obligations to reduce upstream impacts directly would further align with this function.
- 6. Equity: Designs for equity – examining the burdens and benefits across the state**

Like the publicly-managed scenarios, the *EPR scenarios* address this function by requiring DEQ to establish equity standards and integrate those standards into permitting and decision making activities, including approval of PRO(s) program plans. They also ensure that recycling service is provided across the state through parallel service requirements.
- 7. Shared Responsibility: Shares responsibility for the system among players including residents and businesses, producers, state and local governments, and recycling industry**

The *EPR scenarios* share responsibility among the players in the system, though the extent of responsibilities held by different parties differs among the scenarios. In all scenarios, residents and businesses must separate recyclables for collection, and collection service providers must provide recycling services.

In *Scenario 3*, financial and operational responsibilities are shared, since ratepayers finance and local governments operationalize collection, and producers finance and operationalize the post-collection system.

In *Scenario 4*, local governments retain operational responsibilities for collection, but financial responsibility for collection is taken on by producers, and they are also responsible for financial and operational elements of the post-collection system.

In *Scenario 5*, producers have both financial and operational responsibilities for collection and post-collection, though local governments may opt to participate in the collection activities, through agreements with the PRO(s).
- 8. Goals: Uses goals and metrics to measure progress and support ongoing improvement**

The *EPR scenarios* would meet this function by establishing performance goals for producers and by creating a planning and reporting process to track progress against those goals.
- 9. Education: Educates and encourages residents and businesses to use the system properly**

The *EPR scenarios* meet this function by requiring either local governments, or the producers (depending on the scenario), to engage in education programs.

Table 5. How Do Scenarios 3, 4, and 5 Relate to the RSC Desired Functions? Continued

- 10. Understanding Impacts: *Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles.***
The *EPR scenarios* include mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. They do not otherwise engage the public to understand the life-cycle impacts of materials. In *Scenarios 4 and 5*, recycling costs might become more or less visible to the public: they would be included in annual performance reports by the PRO(s), but no longer included in collection bills.
- 11. Material Selection: *Identifies beneficial materials acceptable for collection programs***
The *EPR scenarios* address this function by establishing a process for developing a core list of recyclables. In *Scenario 3*, DEQ would create the core list of recyclables based on its LCA database, and after consultation with producers and local governments. In *Scenarios 4 and 5*, producers would propose a core list in their program plan, and DEQ would review and approve the list using the LCA database as a key data source in its evaluation.
- 12. Collection: *Collects clean, acceptable materials for processing***
The *EPR scenarios* are designed to retain one of the core strengths of the current framework – efficient collection of recyclable materials. *Scenarios 3 and 4* would retain the collection system as it currently functions, while *Scenario 5* would require that producers provide a similarly efficient system. The *EPR scenarios* also require that the entity responsible for collection implement best practices to reduce contamination, which would improve the quality of the material collected.
- 13. Incoming Processing: *Ensures processing facilities receive clean materials and in sufficient volumes***
By mandating a core list of recyclables, banning them from disposal, and centralizing control of the processing infrastructure, the *EPR scenarios* improve the likelihood that facilities receive sufficient quantities of materials for recycling. Requirements on local governments or producers to implement best practices to reduce contamination would improve the quality of incoming materials.
- 14. Outgoing Processing: *Produces quality materials that reach end-markets***
In the *EPR scenarios*, producers would require MRFs to meet processing standards to reduce contamination and improve outgoing material quality. The scenarios' elements that improve incoming material quality (as noted above) will improve outgoing material quality as well, and the inclusion of a MRF certification or permitting program in these scenarios could improve outgoing material quality through the operating standards imposed.
- 15. Downstream: *Ensures materials are managed responsibly from collection through end-markets***
In the *EPR scenarios*, oversight by DEQ and agreements between the PRO(s) and MRFs would address this function by setting criteria for acceptable downstream markets. In addition, the reporting required in these scenarios would improve transparency, which may foster more responsible management.
- 16. Accountability: *Ensures all players in the system perform responsibly***
The *EPR scenarios* require enhanced reporting that would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system through enforcement, if necessary.

Appendix A: Potential Financing Mechanisms for Government Managed Recycling Frameworks

This appendix provides a brief overview of a menu of options for financing government managed recycling frameworks. Each of the funding mechanisms described could be utilized to finance the key components of the scenario ultimately chosen for implementation in Oregon. This would potentially include activities such as market development, infrastructure improvement, administration of MRF registration / certification, MRF gate fees, and other expenditures necessary to implement the selected scenario.

1. Solid Waste Disposal Fee Surcharge

Solid waste disposal fee surcharges (also referred to as tip fee surcharges) are commonly used financing mechanisms for public sector programs. More than 30 states have tip fee surcharges in place. Some generate dedicated funds to finance specific activities (e.g., landfill closure, recycling programs, etc.), while others contribute to the general fund. The surcharge is typically paid by the entity that pays the tip fee. In Oregon, this would be whoever disposes of waste, which could be a self-hauling generator, a transfer station operator or a collection service provider. If paid by a collection service provider, disposal fees are presumed to be ultimately paid by their residential and commercial customers.

Oregon already collects a solid waste disposal fee surcharge of \$1.18 per ton on all materials disposed of in the state and uses the revenue to finance DEQ activities, including grants and other agency activities. A new surcharge would be added (in addition to the existing fee). It would be collected by the disposal facility and remitted to the state for specific uses. It should target all materials generated within the state (not out-of-state waste disposed of in Oregon).

Benefits

Solid waste disposal fee surcharges are often favored because they generate revenue, while also serving as a disincentive to disposal. In effect, these surcharges tax the unwanted behavior to fund the desired behavior. Surcharges are also flexible tools that can be structured to support policy goals, through the distribution of funds. For example, some states adjust the fee so that it is lower for high-performing recycling communities, and higher for lower performing communities, while ensuring that a portion of the funds raised return to the community of origin. Others specifically define the uses of funds to ensure that core needs are met.

Tradeoffs and Challenges

Solid waste disposal fee surcharges can be victims of their own success, in that the funds generated decrease as the state moves toward its waste reduction goals, unless the fees are adjusted over time. They also do not provide any upstream signals to improve the design of products and packaging.

In addition, new government administration and oversight would be required for the collection and distribution of the funds, and there is a risk the proceeds could be re-appropriated to other (non-recycling) activities.

These surcharges may also be viewed as regressive, especially if they are uniform. Communities where recycling is more challenging or less convenient due to geographic or demographic factors may be forced to pay more in surcharges than those where recycling is simpler to implement (e.g., where there is greater population density).

2. Recycling Gate Fee Surcharge

A recycling gate fee surcharge could be assessed on recyclable materials delivered to MRFs for processing. Such a surcharge would be a straightforward extension of the recycling gate payments at a time when market revenues no longer cover processing costs but could be viewed as a set dollar per-ton amount that, depending on market revenues, sometimes leads to positive net gate fees, and sometimes negative net gate fees. In an effort to diversify DEQ's funding, the Oregon legislature authorized a small but related gate fee on recovered materials sent to composting facilities in 2015 (SB 245, Section 4(2)) but conditions have not yet triggered this fee. The RRS team is not aware of any other precedent for this financing mechanism, except in the case of contracted agreements where surcharges are applied when incoming materials fail to meet contamination thresholds.

Like the disposal surcharge, this fee would be paid by the collection service provider, funded through fees paid by residential and commercial customers. The surcharge could be collected by MRFs, then remitted to the state for the dedicated purpose of implementing the selected scenario.

Benefits

The recycling surcharge would generate revenue from recycling system users to invest in the recycling system, treating recycling like a utility or other service that requires users to finance improvements.

Tradeoffs and Challenges

The recycling surcharge would add to the cost of recycling at a time when costs are already escalating significantly and could make recycling even less cost effective, as compared to disposal. This impact could be mitigated if implemented in conjunction with a solid waste disposal surcharge, at the same or a lesser rate than the disposal surcharge.

In addition, new government administration and oversight would be required for the collection and distribution of the funds, and there is a risk the proceeds could be re-appropriated to other (non-recycling) activities.

Finally, these charges do not provide any upstream signals to improve the design of products and packaging.

3. Generator Fee

Some states and local governments assess a fee on generators of solid waste to finance recycling programs. There are many names for these fees, including solid waste fees and environmental fees, among others. Such a fee could be collected in the following ways: as a separate line item on the property tax bill, as is done in Tompkins County, NY; or as a specially assessed fee (on its own bill), such as the Portland Arts Tax model or the Seattle model of an addition to the commercial business and occupation tax.

Benefits

A generator fee can be a consistent and reliable funding source, and it acknowledges that all in the community benefit from safer and better solid waste management. Use of this fee requires everyone who owns property within the system service area to contribute to its improvement. The fee can readily be assessed on residential and commercial properties.

Tradeoffs and Challenges

The generator fee may be viewed as unfair as it would be assessed on entities that own property, not necessarily those that utilize the recycling system. For example, homeowners and commercial property owners would pay the generator fee, while commercial and residential renters would use the system.

In addition, new government administration and oversight would be required for the collection and distribution of the funds, and there is a risk the proceeds could be re-appropriated to other (non-recycling) activities.

Finally, these charges do not provide any upstream signals to improve the design of products and packaging.

4. Collection Service Excise Tax

An excise tax is typically applied on specific goods or services. In this case, the tax could be assessed on recycling collection services, waste collection services or both. As such, it would be paid by the collection service customer (e.g., the resident or business), collected by the collection service provider, and remitted to the state for deposit in a dedicated fund to improve recycling. The State of Minnesota utilizes an excise tax, structured as a sales tax on municipal solid waste bills, to finance certain recycling activities.

Benefits

Like a Generator Fee, an excise tax can be a stable and reliable source of funding, with a broader and more consistent base than a tip fee surcharge, which varies based on the amount of waste disposed. It also may be viewed as equitable since it taxes the system users to make improvements to the recycling system.

Tradeoffs and Challenges

Collection service providers would need to develop systems to collect, track and remit the tax revenues to the state. Also, new government administration and oversight would be required for the collection and distribution of the funds, and there is a risk the proceeds could be re-appropriated to other (non-recycling) activities. Finally, these charges do not provide any upstream signals to improve the design of products and packaging.

5. Retail Packaging Fee

A retail recycling fee would be assessed at the point of sale and paid by the consumer. Revenue from the fee would then be remitted by the retailer to the state for the intended use. This type of fee, commonly referred to as an advance disposal or recycling fee, has been used by a number of states to generate funds for government programs to address particular streams (e.g., scrap tires). There are two precedents for using a retail recycling fee to finance curbside recycling programs and infrastructure. The Florida advanced disposal fee (ADF) on packaging, in place from 1993 to 1995, successfully raised funds to build recycling programs in the state and was phased out as municipal recycling programs and ratepayers assumed the ongoing recycling program operating costs. The Hawaii ADF on glass places a \$0.015 fee on non-deposit glass containers; the funds are used for a statewide glass recovery program.

Benefits

A retail recycling fee can be a consistent and reliable funding source and may be viewed as fair since the fee is paid by consumers and businesses that purchase the materials that ultimately enter the recycling stream.

Tradeoffs and Challenges

A retail recycling fee may also be viewed as regressive, since it is assessed at the retail sale and lower income residents spend a greater proportion of their income on the purchase of necessities, such as food and other packaged products.

In addition, new government administration and oversight would be required for the collection and distribution of the funds, and there is a risk the proceeds could be re-appropriated to other (non-recycling) activities.

6. Producer Fee

Brands and / or producers of packaging and other recyclables could be required to pay a fee to the state, based on the amount of material they sell into the Oregon market. That fee could then be used to create a dedicated fund for recycling. RRS is not aware of any precedent for such a fee to be used to fund public-sector programs, though there have been reported legislative attempts in other states proposing such an approach. This mechanism, however, is typically used to fund PROs that manage EPR programs.



Benefits

Producer fees could be a consistent and reliable funding source and may be viewed as fair since the fee is paid by the party that designs and produces the materials that ultimately are managed in the system, and presumably, passed onto consumers who purchase those products. They could also be eco-modulated to incentivize recyclability, the use of recycled content, or other environmental design features.

Tradeoffs and Challenges

New government administration and oversight would be required for the collection and distribution of the funds, and there is a risk the proceeds could be re-appropriated to other (non-recycling) activities.

Appendix B: Scoring Matrix of the Five Scenarios Relative to the Desired Functions Defined by the RSC

	Scenario 1 Enhanced Government Managed	Scenario 2 Enhanced State Managed with MRF Contracts	Scenario 3 Post-Collection Producer Responsibility	Scenario 4 Producer Responsibility with Local Control	Scenario 5 Full Producer Responsibility with Optional Local Involvement
1. OPTIMIZATION	Yellow	Light Green	Green	Green	Green
2. RESILIENCY	Grey	Yellow	Green	Green	Green
3. FINANCING	Grey	Grey	Green	Light Green	Light Green
4. INTEGRATION	Yellow	Light Green	Green	Green	Green
5. UPSTREAM	Light Blue	Light Blue	Green	Green	Green
6. EQUITY	Yellow	Green	Green	Green	Green
7. SHARED RESPONSIBILITY	Yellow	Yellow	Green	Green	Green
8. GOALS	Yellow	Yellow	Green	Green	Green
9. EDUCATION	Light Blue	Light Blue	Light Blue	Light Blue	Light Blue
10. UNDERSTANDING IMPACTS	Yellow	Yellow	Yellow	Yellow	Yellow
11. MATERIAL SELECTION	Green	Green	Green	Green	Green
12. COLLECTION	Light Green	Green	Green	Green	Green
13. INCOMING PROCESSING	Green	Green	Green	Green	Green
14. OUTGOING PROCESSING	Light Green	Green	Green	Green	Green
15. DOWNSTREAM	Yellow	Green	Green	Green	Green
16. ACCOUNTABILITY	Yellow	Green	Green	Green	Green

- Same as current Oregon framework
- Slightly better than current Oregon framework
- Better than current Oregon framework
- Much better than current Oregon framework
- TBD

Appendix C: Scenario 1– Enhanced Government Managed System

Summary

This scenario builds upon the existing framework in Oregon, as it intends to further enhance state and local government-run recycling programs. Fundamentally it functions like the current framework in Oregon, in which local governments (cities / counties / regional government) must ensure opportunities to recycle by establishing collection programs that meet specific requirements set by the state through administrative rules. Ratepayers are the principle source of financing and collection service is provided predominantly through private service providers, who are overseen by with the local governments either through franchise or licensing agreements.

This scenario builds upon the existing recycling framework in Oregon by enhancing state and local government-run recycling programs and more closely align them with the State’s 2050 Vision. It does so by adding elements that strengthen relative weak points in the framework identified in the gap analysis conducted by the Legal and Relational Frameworks subcommittee in April–May 2019, and in the evaluation of the existing Oregon framework when compared to the desired functions of an optimal system, as defined by the Recycling Steering Committee. The identified gaps and weaknesses of the current system include, but are not limited to, a lack of system integration, limited ability to incorporate life-cycle considerations (especially in relation to impacting upstream product and packaging design), a lack of system harmonization and a lack of well-defined responsibility in the post-collection part of the system, including processing and marketing of recyclables.

The additional elements in this scenario include:

- Parallel access to recycling: a broader-based service provision expanding the opportunity to recycle by ensuring that anywhere solid waste collection service is provided, recycling service must also be provided.
- A harmonized statewide list of materials that must be recycled and are banned from disposal.
- Universal application of volume-based variable rate pricing (i.e. pay as you throw or PAYT), in order to incentivize recycling and waste prevention, and use of best practices to reduce contamination to improve the quality of the recycling stream.
- Require the integration of life-cycle assessment (LCA) results into local solid waste management planning and end-of-life (EOL) decision-making.
- Establish operating and reporting standards for MRFs through a new certification, registration or permit program. These standards would address:
 - Processing requirements (e.g., removal of contamination and proper material sorting and grading).
 - Equity factors.
 - Utilization of responsible end-markets.
 - Reporting and transparency.
- Enhance reporting requirements to provide transparency on costs and material flows.

Common Elements and Application for Scenario 1

- **Parallel access to recycling to expand access to recycling collection**
 - New statutory requirements would specify that collection service providers incorporate recycling service for any customer that is receiving solid waste services, including single family residential, multi-family, commercial and public space properties. Modeled on the current framework, the statute could require bundled services and PAYT pricing for all customers.
- **Mandatory variable rate pricing for services (PAYT) across all sectors (single family, multi-family, commercial) to incentivize recycling and waste prevention**
 - A new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services and ensure that they provide less expensive service for those who generate less waste.
- **MRF certification and reporting to improve environmental performance and transparency**
 - DEQ would exercise its regulatory authority to develop a MRF certification or permitting program that would establish minimum operating and equity standards and reporting requirements.
- **Material-specific life-cycle assessment database to support life-cycle-based decision-making on end-of-life pathways**
 - DEQ would conduct LCA research and house the database. DEQ would use that database to recommend appropriate EOL pathways for the materials studied. The agency would be given authority, through a new statute, to develop a list of core recyclables based on the research, and to require that local programs follow agency guidance on appropriate EOL pathways.
- **Statewide list of recyclables, and a ban on disposal of those items, to provide consistency in programs across the state**
 - A new or revised statute would enable DEQ to establish the core list of recyclables based on the LCA research and grant the authority to ban those recyclables from disposal. A Recycling Advisory Committee would / could be created to advise on this process.
- **Recycled-content requirements and/or incentives to support recycling markets**
 - New statutory requirements would specify mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets. Alternatively, the statute could authorize DEQ to establish minimum recycled-content targets based on certain criteria, potentially including strength of markets and market values.
- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety standards (EHS)**
 - An update to the statute would give DEQ the authority to set and enforce key performance standards. Local governments would be required to meet recycling collection targets, and to implement best practices to reduce contamination, either directly or through their collection service providers. MRFs would be required to meet inbound and outbound contamination targets, equity standards and applicable requirements related to end-market environmental health and safety. In addition, equity standards would guide DEQ decision-making related to permitting / certification of MRFs and other relevant activities.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - The state would exercise existing authority related to false advertising claims to address products or packages labeled as “recyclable” but are not able to be recycled in Oregon. It would also include new statutory authority to require consumer product manufacturers to label their products and packaging in accordance with the DEQ’s LCA-based guidance on end-of-life pathways.
- **Market development activities**
 - DEQ would utilize its existing authority to engage in market development activities on its own, and through collaboration with other state agencies. New resources, generated by the financing mechanism selected to accompany this scenario, would be dedicated to market development activities. Such activities could include research and development efforts to test new markets for recyclables, and / or direct investment in for-profit or not-for-profit ventures that would utilize recycled materials.
- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

Benefits

Scenario 1 seeks to maintain the strength of the current Oregon framework that provides strong public education and outreach as well as relatively stable and consistent collection. The expanded authority given to the state seeks to further enhance system optimization, integration and accountability with an emphasis on the post-collection segments of the system (i.e., processing and end-market development).

The added emphasis on post-collection aspects is an effort to further define responsible handling of materials as they flow downstream, including EHS and equity standards related to processing and material marketing, increase transparency of system costs and material flows, and add funding and technical support for end-market development.

Tradeoffs and Challenges

The degree of change, and who is managing this change, is central to a discussion on tradeoffs and challenges. While this scenario represents less significant change with regard to recycling program management structures, it incorporates policy tools to strengthen the current framework to address key gaps. This scenario represents the most modest operational changes, since it focuses on enacting and implementing new policy through the familiar structure of a local government-contracted, ratepayer-financed system. It would also have a more modest impact on system optimization in terms of meeting the functions defined by the RSC (see Table 3, Table 5, and Appendix B for more detail).

One of the most significant challenges in this scenario is the need for additional funding. As described in Appendix A, there are several options for financing government managed recycling system improvements, but each is challenging in its own way.

This scenario is limited in its ability to impact the upstream environmental impacts of the products and packaging that enter the recycling stream. It also does not effectively share responsibility among players in the recycling chain, a desired function as defined by the RSC, since it does not effectively engage brands, retailers or recycling end-markets. In this scenario, DEQ could set some broad standards for end-markets but would have limited impact on downstream decision making, in terms of designating preferred markets and tracking the chain of custody, given limits in its regulatory authority.

Roles and Responsibilities

State Regulator (DEQ)

In Scenario 1, DEQ would maintain the role it currently plays within the Oregon framework, although it would also be provided with expansion of policy and regulatory authority.

Core elements include:

- Undertake LCA research to determine optimal EOL pathways, by material type or category, and maintain a database of results.
- Integrate LCA research results into key agency policy and activities, such as evaluation and approval of local government plans.
- Develop environmental and social equity standards and incorporate them into agency permitting and decision-making activities. These standards could also be inserted into franchise agreements at the local level.
- Develop a common list of recyclable materials that must be collected in recycling programs across the state and that is banned from disposal.
- Implement new policies, including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided.

- Mandatory variable rate pricing for waste and recycling services for all commercial and residential generators.
- MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets, and equity requirements.
- Require local governments to implement recycling programs that meet policy objectives (see below).
- Convene a Recycling Advisory Group to inform DEQ and provide a platform for discussing system needs and issues.
- Work with Business Oregon, or another established or newly-established entity, to undertake research and development, infrastructure, and other end-market development activities, including grants, loans, and planning.
- Manage and coordinate strategic infrastructure planning with public grantmaking and other investments, including public-private partnerships.

Local Government

As in the current framework, in Scenario 1, local governments would have primary operational responsibility for implementing recycling collection programs. They would be required to:

- Plan and implement recycling programs that meet the following requirements:
 - Provide parallel access for recycling and waste collection for residents, businesses and in public spaces.
 - Collect, at a minimum, the common list of recyclables.
 - Implement best practices to reduce contamination, as recommended by the Infrastructure research project.
 - Comply with cost and material flow reporting requirements.
 - Manage materials consistent with state guidance, based on LCA research.
- Execute recycling education, outreach and enforcement efforts.
- Update franchise or license agreements to comply with new policy including parallel access, collection of the common list of recyclables, equity standards, and reporting, and to require that collection service providers use state-certified MRFs.

Collector

The collectors' basic role would be similar to the current framework in Scenario 1, although their specific responsibilities would change, as the requirements of their franchise or license agreements would be adapted to the enhanced policy environment. In this scenario, collectors would:

- Collect material in accordance with agreement or license with local government.
- Deliver material to permitted, certified or contracted MRF(s), as defined in franchise or license agreement.

Processor

This scenario would structurally integrate MRFs into the framework through certification or permitting requirements that would establish operating and equity standards, reporting requirements and contamination targets.

Financing

In this scenario, the current ratepayer-financed collection system, and its utilization of bundled variable pricing (PAYT), would continue. The key difference in collection is that this approach would be expanded to ensure that recyclables are collected wherever waste is collected, including multi-family buildings,

commercial properties and public spaces. Given these requirements, the current ratepayer for solid waste bills in these venues would also pay for recycling.

Additional resources would be required to finance the new elements defined throughout this section. To meet those resource needs, Oregon could utilize one, or a combination, of the following financing mechanisms:

- **Solid Waste Disposal Fee Surcharge:** a per-ton fee paid by the collection service provider, as funded through fees paid by their residential and commercial customers. It would be collected by the disposal facility and remitted to the state for a dedicated recycling fund. It would target all materials generated within the state (not out-of-state waste disposed of in Oregon).
- **Recycling Gate Fee Surcharge:** assessed on recyclable materials delivered to MRFs for processing. It would be a set dollar per-ton amount that, depending on market revenues, sometimes leads to positive net gate fees, and sometimes negative net gate fees. Like the disposal surcharge, this fee would be paid by the collection service provider, funded through fees paid by residential and commercial customers. The surcharge could be collected by MRFs, then remitted to the state for a dedicated recycling fund.
- **Generator Fee:** paid by generators, which could be collected in the following ways: as a separate line item on the property tax bill, as is done in Tompkins County, NY; or as a specially assessed fee (on its own bill), such as the Portland Arts Tax model or the Seattle model of an addition to the commercial business and occupation tax.
- **Collection Service Excise Tax:** assessed on recycling collection services, waste collection services or both; paid by the collection service customer (e.g., the resident or business), collected by the collection service provider, and remitted to the state for deposit in a dedicated fund to improve recycling. The State of Minnesota utilizes an excise tax, structured as a sales tax on municipal solid waste bills, to finance certain recycling activities.
- **Retail Packaging Fee:** assessed at the point of sale and paid by the consumer. Revenue from the fee would then be remitted by the retailer to the state for the intended use. These types of fees, commonly referred to as advance disposal or recycling fees, have been used by a number of states to generate funds for government programs to address particular streams (e.g., scrap tires). There are two precedents for using a retail recycling fee to finance curbside recycling programs and infrastructure: the Florida advanced disposal fee (ADF) on packaging, in place from 1993 to 1995 and the Hawaii ADF on glass, which places a \$.015 fee on non-deposit glass containers.
- **Producer Fee:** brands and / or producers of packaging and other recyclables could be required to pay a fee to the state, based on the amount of material they sell into the Oregon market. That fee could then be used to create a dedicated fund for recycling. RRS is not aware of any precedent for such a fee to be used to fund public-sector programs, though there have been reported legislative attempts in other states proposing such an approach. This mechanism, however, is typically used to fund PROs that manage EPR programs.

More details on each of these financing options are provided in Appendix A.

Operations

In this scenario, collection service would continue to function similar to the current framework. Service would be arranged and implemented primarily through franchise or licensing agreements between local governments and private service providers, or, in limited instances, through direct local government services. In areas where franchise or license agreements do not include multi-family, commercial or public space properties, an expansion of those agreements or new service agreements would be required to implement the parallel service requirement.

The franchise or licensing agreements would need to be updated to incorporate new program initiatives, as described above (see Roles and Responsibilities-Local Government).

MRFs would be required to meet certification or permit requirements, and collection service providers would be required (through new policy and / or contract provisions) to deliver recyclables to certified or permitted MRFs.

Governance

The governance model in this scenario is similar to the current Oregon framework in that it relies primarily on the DEQ to implement and enforce key elements. This scenario adds a multi-stakeholder Recycling Advisory Committee to advise the agency on key issues.

Local governments bear much of the responsibility for implementation of key elements of this scenario. Their compliance with new elements would be regulated by DEQ. Franchise and license agreements would be a key tool for implementing this scenario.

The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to enable DEQ to implement the new elements of this scenario highlighted earlier in this section (e.g., core recyclables list and disposal ban, parallel recycling requirements, mandatory variable rate pricing). DEQ would extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

Transitional Considerations

From a service interface perspective, the transition to this scenario would appear relatively seamless to some residents and consumers, for the most part, since there would be little change to the core approach to service provision at least in some communities. The types of materials collected might change in some communities, and some classes of generators would receive new recycling opportunities as a result of the parallel access requirement. Generators would also be subject to a higher level of anti-contamination programming. Waste generators could see an increase in their rates to pay for expanded services. In addition, the additional funding source needed would also impact waste generators. That funding source might appear to waste generators on their garbage bill, in property tax changes on their statement or at the retail level. Local governments would need to update their plans, programs and franchise / licensing agreements to comply with new requirements.

Collection service providers would need to transition their service offerings to comply with new agreements, and new statutory requirements (e.g., parallel service requirements). MRF operators would also be required to comply with new certification or permit requirements.

In order to achieve the potential benefits of this scenario, DEQ would need to maximize its use of current authority and new statutory authority would be required.

How Does Scenario 1 Relate to the RSC Desired Functions?

- 1. Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**
Partially addresses this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data. It would also reduce the impact of those materials required to contain higher levels of recycled content.
- 2. Resiliency: Resiliently adapts to changes in material supply and end-market demand**
Could be designed to promote resilience, if this function is considered when developing the process for adding / removing materials from the core list of recyclables, and when developing new implementing regulations related to MRF operations.
- 3. Financing: Provides sustainable and equitable financing for stable operations and capital investments**
The financing mechanism chosen will determine the extent to which this scenario meets this function.
- 4. Integration: Integrates system components to achieve overall system goals**
Shows improvement over the current framework, as it suggests better integration of MRFs into the system by setting mandatory minimum recycled-content standards and by creating additional focus on end-market development to integrate end-markets into the system.
- 5. Upstream: Includes mechanisms to reduce upstream impacts of materials**
Has limited impact on upstream decision making, although requiring the use of recycled content will reduce the upstream impact of the products and packages subject to those mandates.
- 6. Equity: Designs for equity – examining the burdens and benefits across the state**
Addresses this function by requiring DEQ to establish equity standards and integrate those standards into permitting and decision-making activities. DEQ also ensures that recycling service is provided across the state through parallel service requirements.
- 7. Shared Responsibility: Shares responsibility for the system among players, including residents and businesses, producers, state and local governments, and recycling industry**
Shares responsibility for the system among governments, residents and businesses, but does not actively share responsibility with producers or the recycling industry.
- 8. Goals: Uses goals and metrics to measure progress and support ongoing improvement**
Does not directly incorporate goals but does include several elements that improve the ability for the state to achieve the goals in the 2050 Vision.
- 9. Education: Educates and encourages residents and businesses to use the system properly**
Relies on state and local government to educate residents and businesses to recycle properly.
- 10. Understanding Impacts: Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles**
Includes mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. Does not otherwise engage the public to understand the life-cycle impacts of materials.
- 11. Material Selection: Identifies beneficial materials acceptable for collection programs**
Addresses this function by establishing a process for developing a core list of recyclables, and by authorizing DEQ to create the core list of recyclables based on its LCA database.
- 12. Collection: Collects clean, acceptable materials for processing**
Retains one of the core strengths of the current framework – efficient recyclables collection. Also requires local governments to implement best practices to reduce contamination, which would improve the quality of the material collected.
- 13. Incoming Processing: Ensures processing facilities receive clean materials and in sufficient volumes**
By mandating a core list of recyclables, and banning them from disposal, the scenario improves the potential that facilities receive sufficient quantities of materials for recycling. Requirements that local governments implement best practices to reduce contamination would improve the quality of incoming materials.
- 14. Outgoing Processing: Produces quality materials that reach end-markets**
The elements that improve incoming material quality (as noted above) will also improve outgoing material quality, as the inclusion of a MRF certification or permitting program could improve outgoing material quality through the operating standards imposed.
- 15. Downstream: Ensures materials are managed responsibly from collection through end-markets**
Additional reporting requirements would improve transparency, which may foster more responsible management.
- 16. Accountability: Ensures all players in the system perform responsibly**
The enhanced reporting required would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system.

Appendix D: Scenario 2 – Enhanced State Managed with MRF Contracts

Summary

This scenario builds upon Scenario 1 and includes all the elements required to create an enhanced government managed recycling system. Scenario 2 builds upon these elements by requiring DEQ to enter into contracts with MRFs to allow collection service providers to deliver materials, pay no gate fee and receive a reimbursement for bulk transportation expenses. The inclusion of transport cost reimbursement would provide cost parity for ratepayers in more remote communities, resulting in equal access to processing from all parts of the state. Additional legislation will be required to facilitate the contract terms necessary for this scenario to be practical, e.g., to allow for DEQ expenditure at a level greater than the current legislated limit, and to coordinate material flows.

Scenario 2 would require significant additional funding beyond what would be needed for Scenario 1, given the prospective cost of the MRF contracts, and related administration. Potential sources are described in Appendix A. The added MRF contracting expense would reduce costs to ratepayers, as the post-collection costs (MRF processing and transportation) are currently paid by collectors and funded through inclusion in collection rates.

Like Scenario 1, access to recycling collection would be enhanced given the added policies and program elements, including parallel access requirements that would ensure that recycling service is provided everywhere the collection of solid waste service is offered, and universal application of volume-based variable rate pricing, i.e. pay as you throw or PAYT, to incentivize recycling and waste prevention. The scenario would address the need to improve the quality of the recycling stream by requiring local governments to implement best practices to reduce contamination.

Also like Scenario 1, the state would require the integration of LCA data into local solid waste management planning and EOL decision-making; establish operating and reporting standards for MRFs through the use of contracts; enhance reporting requirements to provide transparency on costs and material flows; and, increase investment in infrastructure and end-market development, among other activities (see Roles and Responsibilities section).

Common Elements and Application for Scenario 2

- **Parallel access to recycling to expand access to recycling collection**
 - New statutory requirements would specify that collection service providers incorporate recycling service for any customer that is receiving solid waste services, including single family residential, multi-family, commercial and public space properties. Modeled on the current framework, the statute could require bundled services and PAYT pricing for all customers.
- **Mandatory variable rate pricing for services (PAYT) across all sectors (single family, multi-family, commercial) to incentivize waste prevention**
 - A new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services and ensure they provide less expensive service for those who generate less waste.
- **MRF certification and reporting to improve environmental performance and transparency**
 - DEQ would exercise its regulatory authority to develop a MRF certification or permitting program that would establish minimum operating and equity standards, and reporting requirements.
 - DEQ would also enter into contracts with MRFs to provide processing and marketing services. Such contracts would allow for greater ability to set standards, such as directing materials to end-markets that meet key performance criteria.
- **Material-specific life-cycle assessment (LCA) database to support life-cycle-based decision-making on end-of-life pathways**
 - DEQ would conduct LCA research and house the database. DEQ would use that database to recommend appropriate EOL pathways for the materials studied. The agency would be given authority, through a new statute, to develop a list of core recyclables based on the research, and to require that local plans follow agency guidance on appropriate EOL pathways.
- **Statewide list of recyclables, and a ban on disposal of those items, to provide consistency in programs across the state**
 - A new or revised statute would enable DEQ to establish the core list of recyclables based on the LCA research and grant the authority to ban those recyclables from disposal. The Recycling Advisory Committee could advise on this process.
- **Recycled content requirements and/or incentives to support recycling markets**
 - New statutory requirements would specify mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets. Alternatively, the statute could authorize DEQ to establish minimum recycled-content targets based on certain criteria, potentially including strength of markets and market values.
- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety standards**
 - An update to the statute would give DEQ the authority to set and enforce key performance standards. Local governments would be required to meet recycling collection targets, and to implement best practices to reduce contamination, either directly or through their collection service providers. MRFs would be required to meet inbound and outbound contamination targets, equity standards and applicable requirements related to end-market health and safety. In addition, equity standards would guide DEQ decision-making related to permitting / certification of MRFs and other relevant activities.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - The state would exercise existing authority related to false advertising claims to address products or packages labeled as “recyclable” but are not able to be recycled in Oregon. It would also include new statutory authority to require consumer product manufacturers to label their products and packaging in accordance with the DEQ’s LCA-based guidance on end-of-life pathways.
- **Market development activities**
 - DEQ would utilize its existing authority to engage in market development activities on its own, and through collaboration with other state agencies. New resources, generated by the financing mechanism selected to accompany this scenario, would be dedicated to market development activities. Such activities could include research and development efforts to test new markets for recyclables, and / or direct investment in for-profit or not-for-profit ventures that would utilize recycled materials.

Common Elements and Application for Scenario 2 Continued

- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

Benefits

Like Scenario 1, Scenario 2 seeks to maintain the strength of the current Oregon framework that provides strong public education and outreach as well as relatively stable and consistent collection. The expanded authority given to the state seeks to further enhance system optimization, integration and accountability, with an emphasis on the post-collection segments of the system – i.e. processing and end-market development.

The added emphasis on post-collection aspects is an effort to mitigate risk and uncertainty associated with volatile recycling commodity markets, while further defining responsible handling of materials as they flow downstream, including EHS and equity standards related to processing and marketing, increasing transparency of system costs and material flows and adding funding and technical support for end-market development.

Tradeoffs and Challenges

The degree of change, and who is managing this change, is central to a discussion on tradeoffs and challenges. While this scenario represents less significant change with regard to recycling program management structures, it does incorporate significant policy tools to strengthen the current framework to address key gaps. In addition, this scenario reflects a significant operational change to the processing system, although it would be managed by familiar players, most notably DEQ.

One of the most significant challenges in this scenario is the need for substantial additional funding to cover the cost of MRF contracts. As described in Appendix A, there are several options for financing government managed recycling system improvements, but each is challenging in its own way.

This scenario is limited in its ability to affect the upstream environmental impacts of the products and packaging that enter the recycling stream. It also does not effectively share responsibility among players in the recycling chain, a desired function as defined by the RSC, since it does not effectively engage brands, retailers, or recycling end-markets. The MRF contracting elements that distinguish this scenario would provide more tools to impact downstream market decision making around responsible EHS and equity standards, but could be challenging to implement, particularly if the path chosen involves significantly-enhanced DEQ contracting authority, or direction of the flow of recyclables. This would require new legislation to grant DEQ expenditure authority to contract with MRFs and developing a new level of expertise within DEQ to negotiate and manage MRF contracts.

Roles and Responsibilities

State Regulator (DEQ)

In Scenario 2, DEQ would maintain the role it currently plays within the Oregon framework, although it would be provided expanded policy and regulatory authority. In addition, DEQ would play a more active role in the recycling marketplace by entering into contracts with MRFs, to ensure that recycling processing capacity is available to community programs in the state at no charge to them.

Core elements of the state's role in Scenario 2 includes:

- Undertake LCA research to determine optimal EOL pathways, by material type or category, and maintain a database of results.
- Integrate LCA research results into key agency policy and activities, such as evaluation and approval of local government plans.
- Develop environmental and social equity standards and incorporate them into agency permitting and decision-making activities. These standards could also be inserted into franchise / license agreements at the local level.
- Develop a common list of recyclable materials that must be collected in recycling programs across the state and that is banned from disposal.
- Implement new policies, including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided.
 - Mandatory variable rate (PAYT) pricing for waste and recycling services for all commercial and residential generators.
- MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets, and equity requirements.
- Require local governments to implement recycling programs that meet policy objectives (see below).
- Convene a Recycling Advisory Group to inform DEQ and provide a platform for discussing system needs and issues.
- Work with Business Oregon, or another established or newly created entity, to undertake research and development, infrastructure and end-market development activities, including grants, loans and planning.
- Manage and coordinate strategic infrastructure planning with public grantmaking and other investments, including public-private partnerships.
- Enter into contracts with MRFs to process and market recyclables generated within the state; contracts would require that MRFs accept recyclables from collection service providers, charge no gate fee, provide reimbursement for transportation costs, and market materials to end-market outlets that meet key criteria established by DEQ.

Local Government

As in the current framework, in Scenario 2, local governments would have primary operational responsibility for implementing recycling collection programs. They would be required to:

- Plan and implement recycling collection programs that meet the following requirements:
 - Provide parallel access for recycling and waste collection for residents, businesses and in public spaces.
 - Collect, at a minimum, the common list of recyclables.
 - Implement best practices to reduce contamination, as recommended by the Infrastructure research project.
 - Comply with cost and material flow reporting requirements.
 - Manage materials consistent with state guidance, based on LCA research.
- Execute recycling education, outreach and enforcement efforts.
- Update franchise / license agreements to comply with new policy including parallel access, collection of the common list of recyclables, and reporting, and to require that collection service providers use state contracted MRFs.

Collector

The collectors' basic role would be similar to the current framework in Scenario 2, although their specific responsibilities would change as the requirements of their franchise or license agreements would be adapted to the enhanced policy environment. In this scenario, collectors would:

- Collect material in accordance with agreement or license with local government.
- Deliver material to permitted, certified or contracted MRF(s), as defined in franchise / license agreement.

Processor

Scenario 2 would integrate MRFs into the framework through state contracts that would allow DEQ a stronger tool to establish and enforce newly-created operating and equity standards, reporting requirements, contamination targets and end-market criteria, while providing equal access to processing for all state residents and mitigating risks and costs to local programs / ratepayers associated with market volatility. Processors would compete for state contracts, and, if selected, would comply with contract terms.

Financing

In Scenario 2, the current ratepayer-financed collection system, and its utilization of bundled variable pricing (PAYT), would continue. The key difference in collection is that this approach would be expanded to ensure that recyclables are collected wherever waste is collected (parallel access), including multi-family buildings, commercial properties, and public spaces. Given this requirement, the current ratepayer for solid waste bills in these venues would also pay for recycling.

A significantly greater level of resources would be required for Scenario 2, given the potential cost of administering the MRF processing contracts and their administration, in addition to the other new elements defined throughout this section. MRF processing is currently paid for through collection rates. In Scenario 2, these processing costs would increase to meet new standards and would be paid by the state as opposed to collection companies. The added MRF contracting expense would reduce costs to ratepayers, as the post-collection costs (MRF processing and transportation) are currently paid by collectors and funded through inclusion in collection rates. The inclusion of transport costs would provide cost parity for ratepayers in more remote communities, resulting in equal access to processing from all parts of the state. To meet those resource needs, Oregon could utilize one, or a combination, of the following financing mechanisms:

- **Solid Waste Disposal Fee Surcharge:** a per-ton fee paid by the collection service provider, as funded through fees paid by their residential and commercial customers. It would be collected by the disposal facility and remitted to the state for a dedicated recycling fund. It would target all materials generated within the state (not out-of-state waste disposed of in Oregon).
- **Recycling Gate Fee Surcharge:** assessed on recyclable materials delivered to MRFs for processing. It would be a set dollar per-ton amount that, depending on market revenues, sometimes leads to positive net gate fees, and sometimes negative net gate fees. Like the disposal surcharge, this fee would be paid by the collection service provider, funded through fees paid by residential and commercial customers. The surcharge could be collected by MRFs, then remitted to the state for a dedicated recycling fund.
- **Generator Fee:** paid by generators, which could be collected in the following ways: as a separate line item on the property tax bill, as is done in Tompkins County, NY; or as a specially-assessed fee (on its own bill) such as the Portland Arts Tax model or the Seattle model of an addition to the commercial business and occupation tax.
- **Collection Service Excise Tax:** assessed on recycling collection services, waste collection services or both; paid by the collection service customer (e.g., the resident or business), collected by the

collection service provider, and remitted to the state for deposit in a dedicated fund to improve recycling. The State of Minnesota utilizes an excise tax, structured as a sales tax on municipal solid waste bills, to finance certain recycling activities.

- **Retail Packaging Fee:** assessed at the point of sale and paid by the consumer. Revenue from the fee would then be remitted by the retailer to the state for the intended use. These types of fees, commonly referred to as advance disposal or recycling fees, have been used by a number of states to generate funds for government programs to address particular streams (e.g., scrap tires). There are two precedents for using a retail recycling fee to finance curbside recycling programs and infrastructure: the Florida advanced disposal fee (ADF) on packaging, in place from 1993 to 1995, and the Hawaii ADF on glass, which places a \$.015 fee on non-deposit glass containers.
- **Producer Fee:** brands and / or producers of packaging and other recyclables could be required to pay a fee to the state, based on the amount of material they sell into the Oregon market. That fee could then be used to create a dedicated fund for recycling. RRS is not aware of any precedent for such a fee to be used to fund public-sector programs, though there have been reported legislative attempts in other states proposing such an approach. This mechanism, however, is typically used to fund PROs that manage EPR programs.

More details on each of these financing options are provided in Appendix A.

Operations

In Scenario 2, collection service would continue to function much like the current framework. Service would be arranged and implemented primarily through franchise or licensing agreements between local governments and private service providers, or, in limited instances, through direct local government services. In areas where franchise or license agreements do not include multi-family, commercial or public space properties, an expansion of those agreements or new service agreements would be required to implement the parallel service requirement.

The franchise or licensing agreements would need to be updated to incorporate new program initiatives, as described above (see Roles and Responsibilities-Local Government). Collection service providers would be required (through new policy and / or contract provisions) to deliver recyclables to contracted MRFs.

In Scenario 2, in addition to meeting certification or permit requirements, MRFs would compete for state contracts. MRF contracts could be structured in a number of ways, depending on DEQ contractual authority, which would be a result of new legislation, and the objectives of the contract. At a minimum, a contract between DEQ and a MRF would include the following provisions:

- A processing cost derived from a formula that is based on processing costs, material market values, and profit margin³.
- A per-mile reimbursement of transportation costs based on the distance between the collection route or reload facility and the MRF.
- Minimum and maximum material acceptance capabilities, or processing cost variations based on quantity delivered (e.g., \$X per ton for 10,000 to 20,000 tons, \$Y per ton for 20,000 to 50,000 tons).
- Operating standards, including acceptable inbound and outbound material contamination rates.
- Equity standards.
- Criteria for acceptable material end-markets.

³ The Joint Advisory on Designing Contracts for Recyclables, issued [by SWANA and NWRA](#), is a resource for this effort

- Reporting and accountability for all of the above

Governance

The governance model in this scenario is similar to the current framework in that it relies primarily on the DEQ to implement and enforce key elements. This scenario adds a multi-stakeholder Recycling Advisory Committee to advise the agency on key issues.

Local governments bear much of the responsibility for implementation of key elements of this scenario. Their compliance with new elements would be regulated by DEQ. Franchise and license agreements would be a key tool for implementing this scenario.

The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to enable DEQ to implement the new elements of this scenario highlighted earlier in this section (e.g., core recyclables list and disposal ban, parallel recycling requirements, mandatory variable rate pricing). DEQ would extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

Additional statutory authority would be required for DEQ to enter into contracts with MRFs. This additional authority would need to address such issues as, if the value of contracts exceeds the agency's current expenditure limits, or, if the structure required the direction of flow from certain municipalities to certain facilities.

Transitional Considerations

The transition to **Scenario 2** could appear relatively seamless to some residents and consumers, for the most part, since there would be little change to the core approach to collection service provision, at least in some communities. The types of materials collected might change in some communities, and some classes of generators would receive new recycling opportunities as a result of the parallel access requirement. Generators would also be subject to a higher level of anti-contamination programming. Waste generators could see an increase in their rates to pay for expanded services. In addition, the additional funding source needed would also impact waste generators. That funding source might appear to waste generators on their garbage bill, in property tax changes on their statement or at the retail level. Local governments would need to update their plans, programs and franchise / licensing agreements to comply with new requirements.

Collection service providers would need to transition their service offerings to comply with new agreements, and new statutory requirements (e.g., parallel service requirements). MRF operators would also be required to comply with new certification or permit requirements.

The most challenging element of the transition to Scenario 2 would be determining and implementing an appropriate structure for the contracts between DEQ and MRF operators, especially since additional statutory authority would be required. In any instance, the transition would significantly change the operating context of MRFs in the state, which have traditionally operated on the spot-market, as opposed to long-term contracts. The transition would also impact relationships between collection service providers and MRFs, particularly if the structure required that material flow be directed from communities to specific MRF contractors.

In order to achieve the potential benefits of this Scenario, DEQ would need to maximize its use of current authority and new statutory authority would be required, including authority to undertake the expenditure necessary to enter into contract with MRFs to cover the cost of transportation, processing and marketing of collected recyclables.

How Does Scenario 2 Relate to the RSC Desired Functions?

- 1. Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**
Partially addresses this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data. It would also reduce the impact of those materials required to contain higher levels of recycled content. Scenario 2 would add to these elements by using contractual requirements to direct recyclables to end-markets that meet key criteria. However, depending on the funding source and amount, financial resources may be inadequate to recycle materials at an optimal level.
- 2. Resiliency: Resiliently adapts to changes in material supply and end-market demand**
Could be designed to promote resilience, if this function is considered when developing the process for adding / removing materials from the core list of recyclables, and when developing new implementing regulations related to MRF operations. Scenario 2 would allow the state to absorb the risk related to changes in end-market demand, and thus improve resiliency, if the state were allowed to build a reserve fund for contingencies.
- 3. Financing: Provides sustainable and equitable financing for stable operations and capital investments**
The financing mechanism chosen will determine the extent to which this scenario meets this function.
- 4. Integration: Integrates system components to achieve overall system goals**
Shows improvement over the current framework, as it suggests better integration of MRFs into the system by setting mandatory minimum recycled-content standards and by creating additional focus on end-market development to integrate end-markets into the system. Scenario 2 more fully integrates MRFs through contract provisions.
- 5. Upstream: Includes mechanisms to reduce upstream impacts of materials**
Has limited impact on upstream decision making, although requiring the use of recycled content will reduce the upstream impact of the products and packages subject to those mandates.
- 6. Equity: Designs for equity – examining the burdens and benefits across the state**
Addresses this function by requiring DEQ to establish equity standards, and integrate those standards into permitting and decision-making activities, including MRF contracts. DEQ also ensures that recycling service is provided across the state through parallel service requirements.
- 7. Shared Responsibility: Shares responsibility for the system among players including residents and businesses, producers, state and local governments, and recycling industry**
Shares responsibility for the system among governments, residents and businesses, but does not actively share responsibility with producers or the recycling industry.
- 8. Goals: Uses goals and metrics to measure progress and support ongoing improvement**
Does not directly incorporate goals but does include several elements that improve the ability for the state to achieve the goals in the 2050 Vision.
- 9. Education: Educates and encourages residents and businesses to use the system properly**
Relies on state and local government to educate residents and businesses to recycle properly.
- 10. Understanding Impacts: Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles**
Includes mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. Does not otherwise engage the public to understand the life-cycle impacts of materials.
- 11. Material Selection: Identifies beneficial materials acceptable for collection programs**
Addresses this function by establishing a process for developing a core list of recyclables, and by authorizing DEQ to create the core list of recyclables based on its LCA database.
- 12. Collection: Collects clean, acceptable materials for processing**
Retains one of the core strengths of the current framework – efficient recyclables collection. Also requires local governments to implement best practices to reduce contamination, which would improve the quality of the material collected.
- 13. Incoming Processing: Ensures processing facilities receive clean materials and in sufficient volumes**
By mandating a core list of recyclables, and banning them from disposal, the scenario improves the potential that facilities receive sufficient quantities of materials for recycling. The contract between MRFs and DEQ may also include provisions related to delivery of sufficient quantities. Requirements that local governments implement best practices to reduce contamination would improve the quality of incoming materials.
- 14. Outgoing Processing: Produces quality materials that reach end-markets**
The elements that improve incoming material quality (as noted above) will also improve outgoing material quality, and the inclusion of a MRF certification or permitting program could improve outgoing material quality through the operating standards imposed. The MRF contracts in Scenario 2 would also incorporate processing standards to reduce contamination.
- 15. Downstream: Ensures materials are managed responsibly from collection through end-markets**
Additional reporting requirements would improve transparency, which may foster more responsible management. In Scenario 2, the MRF contracts would address this function by setting criteria for acceptable downstream markets.
- 16. Accountability: Ensures all players in the system perform responsibly**
The enhanced reporting required would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system.

Appendix E: Scenario 3 – Post-Collection Producer Responsibility

Summary

In Scenario 3, specific producer obligations would be established in authorizing legislation. Producers would likely comply through participation in one or more producer responsibility organizations (PROs), which would develop a program plan, set and collect fees from producers sufficient to fund the plan, and execute the plan. The authorizing legislation would also set additional requirements on other players in the system, including parallel access collection requirements, volume-based pricing mandates, effective sorting requirements on processors and EHS requirements of end-markets. Importantly, Scenario 3 require producers to reduce upstream (pre-consumer) environmental impacts (for example, through disclosure and reduction of life-cycle impacts) and to provide financial support for litter abatement and waste reduction/prevention, in addition to recycling program costs, in order to capture the full spectrum of programs required to address the impacts of their products and packaging on the environment.

Scenario 3 integrates the current framework's collection system into an extended producer responsibility (EPR) approach by requiring producer responsibility for the post-collection segments of the recycling system (e.g., material processing and marketing). In this scenario, local governments would continue to manage recycling collection programs, while the producers of designated recyclable materials would be required to manage transportation, processing and marketing of residential- and commercially-generated recyclables, and to finance any costs of those services. This presumably would be done through contracts with MRFs.

Collection would continue to be organized as it is in the current Oregon framework, where local governments (cities / counties / regional governments) ensure the opportunity to recycle by establishing recycling collection programs that meet specific state requirements. Service would continue to be provided predominantly through private service providers under franchise or licensing agreements. Collection would be enhanced through parallel access requirements that would ensure that recycling service is provided wherever solid waste service is offered. And, local governments would be subject to additional obligations, including implementing best practices for education, implementing contamination reduction, and other activities.

The recycling collection costs would continue to be funded by ratepayers/customers, while the transportation, processing and marketing would be funded by producers.

The authorizing legislation would require producers, individually, or through participation in one or more PROs, to submit a program plan defining how they would meet their obligations. DEQ would have regulatory oversight through negotiation and approval of the plan, and periodic reviews, to ensure the obligations are being met and could undertake enforcement. DEQ could convene a Recycling Advisory Committee to advise this process. Producers would also be responsible for financing new system elements related to DEQ administration and LCA research. As such, the additional funding sources required for Scenarios 1 and 2 would not be necessary in this scenario.

The producer fee structure would incorporate eco-modulation to incentivize design for environment (DfE) standards for products and packaging design. Eco-modulation adjusts the fees paid by brands and retailers to reward attributes such as recyclability, use of recycled content, or other aspects of DfE, and to penalize the design of problematic packages or products. Eco-modulation would reflect the results of DEQ's life-cycle assessment research.

Common Elements and Application for Scenario 3

- **Parallel access to recycling to expand access to recycling collection**
 - In Scenario 3, this element would be implemented through a requirement that collection service providers incorporate recycling service for any customer that is receiving solid waste services, including single family residential, multi-family, commercial and public space properties. Modeled on the current framework, the statute could require bundled services and pricing for all customers.
- **Mandatory variable rate (PAYT) pricing for services across all sectors (single family, multi-family, commercial) to incentivize waste prevention**
 - In Scenario 3, a new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services that provides less expensive service for those who generate less waste. The variable rate pricing mandate would only apply to solid waste and recycling collection services, since recycling transportation, processing and marketing costs would be the responsibility of producers.
- **MRF certification and reporting to improve environmental performance and transparency**
 - In Scenario 3, like the publicly-managed scenarios, this element would be implemented through DEQ's existing regulatory authority, which allows the agency to develop a MRF permitting program that would establish minimum operating and equity standards and reporting requirements.
- **Material-specific life-cycle assessment database to support end-of-life and design for the environment-based decisions**
 - In Scenario 3, DEQ would conduct LCA research and maintain a database of results. DEQ would use that database to recommend appropriate EOL pathways for the materials studied, and to guide decisions related to producer plan elements such as eco-modulated fees and the core list of recyclables.
- **Statewide list of recyclables and ban on disposal of those items to provide consistency in programs across the state**
 - In Scenario 3, a new or revised statute would enable DEQ to establish the core list of recyclables in consultation with producers and local governments and grant the authority to ban those recyclables from disposal based on the LCA research and its recommendation of an optimal EOL pathway.
- **Recycled-content requirements and/or incentives to support recycling markets**
 - The eco-modulated fee structure would incentivize the use of recycled content. In addition, the authorizing statute could set new requirements to implement this element by either specifying mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets, or authorizing DEQ to establish minimum recycled-content targets based on certain criteria, including strength of markets and market values.
- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety standards**
 - The authorizing statute would give DEQ the authority to set and enforce key performance standards for producers, including material-specific recycling rates, contamination rates and equity and end-market EHS standards. In addition, equity standards would guide DEQ decision-making related to permitting / certification of MRFs. Local governments would be required to meet recycling collection targets, and to implement best practices to meet inbound contamination targets, either directly or through their collection service providers.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - Like the publicly-managed scenarios, in Scenario 3, the state would exercise existing authority related to false advertising claims to address products or packages that are labeled as "recyclable" but are not able to be recycled in Oregon. New statutory authority would allow the state to require consumer product manufacturers to label their products and packaging in accordance with the DEQ's LCA-based guidance on end-of-life pathways. In addition to, or as an alternative, such labeling standards could be incentivized in the eco-modulated fee structure.
- **Market development activities**
 - Producers would be required to set aside a portion of the PRO(s) budget(s) and collected fees to invest in market development activities.

Common Elements and Application for Scenario 3 Continued

- **Addressing litter and upstream**
 - Establish requirements on producers to fund litter abatement and waste reduction / prevention and upstream activities.
- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

Benefits

The current collection system remains largely intact, thus the scenario would leverage the relative strength of that element of the existing framework. The current collection system would be further improved and integrated into the larger recycling system through the inclusion of any of the additional common elements, such as, parallel access to recycling, mandatory PAYT, a statewide list of recyclables and generator-facing contamination reduction programming.

The scenario enhances system optimization, integration and accountability by designating a responsible party for the post-collection segments of the recycling system (i.e., processing and end-market development). In these systems, producers tend to approach the recycling system as a supply chain, creating incentives for improved material quantity and quality among all participants.

Assigning responsibility for the post-collection system mitigates the risk and uncertainty associated with volatile recycling commodity markets and ensures an end-market for collected materials. This scenario would also facilitate responsible handling of materials as they flow downstream, increasing transparency of system costs and material flows and adding funding and technical support for end-market development. Reimbursement of collector-to-processor transportation costs (similar to Scenario 2) would provide more equitable recycling access to all Oregonians regardless of their proximity to processing facilities. In addition, eco-modulated producer fee structures can incentivize upstream design changes and DfE choices for packaging producers.

Importantly, this scenario would address one of the key challenges to Scenario 2 – DEQ’s ability to fund and manage MRF contracts – by placing those responsibilities on producers (i.e., brands and retailers), through the use of a PRO(s).

Tradeoffs and Challenges

This scenario represents a significant philosophical and operational shift in the approach to managing recycling within the state. Bringing producers, and their resources, into the framework will change existing business relationships and the industry dynamic and discourse. Implementation of this scenario would require building trust and understanding among the stakeholders on both sides. DEQ and a newly formed Recycling Advisory Committee would be in an important position to facilitate any such transitions and ensure that all voices are heard in the process.

In this scenario, DEQ would play a critical role in ensuring that the collection programs operated by local governments are consistent and integrated with the producer-managed processing system. This scenario also supplements EPR with a strong base public policy, to ensure that education and public engagement to understand the costs of recycling are bolstered.

Roles and Responsibilities

State Regulator (DEQ)

The DEQ would maintain all of its current responsibilities and assume the following:

- Negotiate and approve the producer program plans, review annually, and enforce if necessary, to ensure that the plan(s) meets statutory obligations and are aligned with the 2050 Vision.
- Conduct LCA research to determine optimal end-of-life pathways, by material type or category, maintain a database of results, and define factors to be used for eco-modulation in fee setting.
- Develop equity standards and incorporate into agency permitting and decision-making activities. These standards would / could trickle down to the local level into franchise agreements.
- Implement new policies, including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided,
 - Mandatory variable rate pricing for waste and recycling services for all commercial and residential generators.
- Set MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets, and equity requirements.
- Convene a Recycling Advisory Group to inform the agency and provide a platform for discussing system needs and issues.
- Require local governments to implement recycling programs that meet policy objectives (see below).
- Work with producers and local governments to develop a common list of recyclable materials that must be collected in recycling programs across the state.
- Coordinate and oversee the use of producer-provided funding for litter abatement, waste reduction/prevention, and potentially some upstream activities. Much of this funding would likely be allocated to grants and/or contracts, for example, to reimburse local governments or other organizations for litter abatement efforts, or to fund waste prevention and reuse projects.

Producers, through a producer responsibility organization(s)

In Scenario 3, producers of packaging and printed paper (i.e., brands and retailers) would be required to manage the recycling processing and marketing system. Producers would work through one or more producer responsibility organizations to meet their obligations. The PRO(s) would be required to:

- Establish a fee structure that meets DEQ objectives, based on LCA research and DfE objectives.
- Report annually on program performance, fee structure and material flows.
- Implement research and development, infrastructure and end-market development activities, as necessary.
- Develop a five-year program plan to describe how obligations will be met, including the approach to agreements with MRFs, reimbursement of collection service provider transportation costs, producer fee structure, etc.; secure approval of plan from DEQ.
- Provide recycling processing and marketing services sufficient to manage residential and commercial recyclables in the state. Producers would contract with MRFs for processing, marketing and transportation, so that collection service providers could deliver recyclables to facilities, pay no gate fee, and receive a transportation reimbursement (a per-mile payment based on the number of miles from the collection route).
- Provide education and outreach tools and resources to local governments, businesses and collection service providers.
- Five-year program plan would also include the approach to fund litter abatement and waste reduction/prevention and upstream activities.

Local Government

In Scenario 3, local government's role would be similar to that in the current Oregon framework, as they would continue to have primary operational responsibility for implementing recycling collection programs. However, the specifics of those responsibilities would be adapted to the enhanced policy environment. Local governments would be required to:

- Plan and implement recycling programs that meet the following requirements:
 - Parallel access for recycling and waste for residents, businesses and in public spaces.
 - Collect the common list of recyclables and deliver to processors consistent with the PRO(s) plan(s).
 - Implement best practices to reduce contamination, as recommended by the Infrastructure research project.
 - Comply with cost and material flow reporting requirements.
 - Manage materials consistent with state guidance, based on LCA research.
- Execute education, outreach and enforcement efforts related to collection.
- Update franchise / license agreements to comply with new policy including parallel access, collection of the common list of recyclables, and reporting, and to require that collection service providers deliver materials in accordance with the PRO(s) plan(s).

Collector

In Scenario 3, the collectors' basic role would not change from the current framework, although their specific responsibilities would adapt to the requirements of their franchise or license agreements that were adjusted to reflect the enhanced policy environment. In this scenario, collectors would:

- Collect material in accordance with agreement or license with local government.
- Deliver material to MRF(s), as defined in franchise or license agreement.

Processor

This scenario would structurally integrate MRFs into the framework through agreements with the PRO(s), and via certification or permitting requirements that would establish operating and equity standards, reporting requirements, contamination targets and end-market criteria. In these scenarios, MRFs would:

- Provide service in accordance with the PRO(s) contract(s).
- Comply with state regulatory / reporting standards defined in certification or permit.

Financing

In Scenario 3, the current ratepayer-financed collection system and its utilization of bundled variable pricing (PAYT) will continue. However, ratepayers would no longer pay (through rates) for the costs of the post-collection system, as those costs would be paid for by the producers. The key difference in collection is that this approach would be expanded to ensure that recyclables are collected wherever waste is collected, including multi-family buildings, commercial properties and public spaces. As such, the current ratepayer for solid waste bills in these venues would also pay for recycling collection service.

Producers would finance and coordinate the transportation, processing and marketing of recyclables post-collection, as well as research and development, infrastructure and end-market development, with research and development, infrastructure, and end-market development projects being financed by the PRO(s) through a set percentage of the PRO(s) budget. Producers would also fund litter prevention and control, waste reduction/prevention and upstream activities. The program plan might designate activities planned to utilize those funds, when implementation of those activities is the responsibility of the producers (e.g., upstream impact reduction activities).

In Scenario 3, the PRO(s) would be responsible for funding additional administrative oversight and LCA research performed by DEQ to inform EOL decision-making and factors for setting eco-modulated fees. The level of funding required for these tasks, and the mechanism for transferring that funding, would be either set in the statute, or negotiated as a part of the program plan.

In Scenario 3, each producer would pay fees into a PRO(s), which would be responsible for meeting the statutory obligation. The fees assessed by the PRO(s), and paid by producers, would utilize an eco-modulated approach, such that discounts would be given to materials that meet recycling and DfE objectives, as defined by DEQ research, and penalties will be paid for materials that disrupt the recycling system. This would result in different per-unit costs for different materials and packaging formats based on their environmental impact and impact to the recycling system. This would provide clear feedback to producers to incentivize DfE considerations, such as reduction in material inputs, use of recyclable materials, and incorporation of recycled content. The eco-modulated rate schedule would be a part of the program plan subject to approval by DEQ.

Operations

In Scenario 3, collection service would continue to function similar to the current Oregon framework. Collection service would be arranged and implemented primarily through franchise or licensing agreements between local governments and private service providers or provided directly (in limited instances). In areas where franchise or license agreements do not include multi-family, commercial or public space properties, an expansion of those agreements, or new service agreements, would be required to implement the parallel service requirement. In this scenario, franchise or licensing agreements would need to be updated as described above (see Local Government Responsibilities).

Collection systems could also include drop-off collection. This service could recognize materials that are also designated for curbside collection, as well as items such as plastic film and Styrofoam that are not conducive to on-route collection. Drop-off collection could be a complement to an established curbside collection program or established as a stand-alone collection option in areas where no curbside solid waste collection is provided.

The PRO(s) would contract with MRFs to process and market program material. The contracts would set quality standards (i.e., inbound and outbound contamination rates) and specify end-market environmental health and safety standards. The program plan would include a requirement that collection service providers be reimbursed for transportation costs on a per-mile basis, based on the distance from a collection route. As such, the contracts would allow collection service providers to deliver materials with no gate fee and have their transportation costs covered, to ensure cost-equivalency in all parts of the state.

Governance

In Scenario 3, the governance model is similar to the current framework in that it relies primarily on DEQ to implement and enforce core elements, and local government implementation through collection. Local governments' approach to compliance with new elements would be regulated and approved by DEQ. Franchise and license agreements would be a key tool for implementing the collection elements of these scenarios. The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to enable DEQ to implement the new elements of these scenarios highlighted earlier in this section (e.g., core recyclables list and disposal ban, parallel recycling requirements, mandatory variable rate pricing, contamination reduction programming).

The authorizing legislation for the EPR system in Scenario 3 would define key elements in the producers' governance structure. For example, the legislation would authorize either one or multiple PROs. It could also

define whether the PRO(s) should be not-for-profit, or for-profit, and what the board structure would be (e.g., only producers vs. producers and other stakeholders).

The scenario require producers and / or their PRO(s) to develop and execute a program plan. The plan would present critical details of program implementation, finance and operations and would be submitted by the PRO(s). DEQ would retain ultimate governance over the programs, with regulatory oversight and enforcement authority over the producers through the program plan approval and review process, to ensure the producers meet their statutory obligations.

The program plan(s) for Scenario 3 would include, but not be limited to:

- Provisions of agreements with MRFs, including standards for inbound and outbound contamination and end-markets.
- Provisions of transportation reimbursement for inbound materials delivered to a MRF.
- A fee structure that incorporates DEQ guidance on factors reflected in eco-modulation.

DEQ would oversee producer implementation of their plans and enforce as necessary. It would also extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

DEQ would be required to consult with producers and local governments to determine the materials to include on a statewide list of recyclables that would be required to be collected for recycling and banned from disposal. Additional statutory authority would be required to assign responsibility for processing and marketing of recyclables to producers, and to implement additional program requirements (e.g., litter abatement costs, infrastructure and market development activities). A Recycling Advisory Committee could / would be formed by DEQ to advise the agency on key policy and implementation issues.

Common Elements Recommended for All EPR Models Applied to Scenario 3

- Scope of obligated materials.
 - The enabling legislation establishing the EPR framework for Scenario 3 would need to define obligated producers based on a scope of obligated materials. Typically, EPR programs include packaging only, packaging and printed paper (to include junk mail, newspapers, etc.), or packaging, printed paper and like products (including things like resealable bags, or aluminum foil trays that may or may not have been packaging before disposal). Given that it is likely that collection programs already include products that are similar to packaging, Oregon may want to consider including printed paper and like products. Furthermore, consideration should be given to LCA data in developing the list of obligated materials.
- Producers would finance litter abatement, though addressing litter abatement would be handled by local or state government.
- Producers would be required to finance waste reduction/prevention efforts, potentially though a fund to be administered by DEQ to support local implementation.
- Regulatory authority defines optimal EOL pathway.
 - To ensure the EPR programs are designed with life-cycle impacts in mind, DEQ would be granted authority to designate the appropriate end-of-life pathway for each material type or category based on LCA data.
- Eco-modulated fees are set by PRO(s) but informed by regulatory authority based on LCA / DfE factors.

- To capture the potential benefit of reducing upstream impacts through EPR, it is imperative that eco-modulated fees are used to incentivize better material use and product or package design. In all the EPR scenarios, the eco-modulation formulas would be guided by LCA data, as defined by DEQ.
- Producers would be required to finance and implement upstream (pre-consumer) impact reduction efforts, potentially subject to standards set by DEQ, or proposed by the PRO and approved by DEQ. Impact reduction efforts could include, as example, the disclosure of life-cycle environmental impacts, detoxification, decarbonization, or other design, supply chain, and/or production changes that reduce environmental impacts.
- Mechanism for investment / coordination in infrastructure and markets development.
 - PROs would invest in infrastructure and end-markets by allocating a portion of the producer fees to these activities.
- Education and outreach clearly defined and educational resources provided by the PRO(s).
 - Responsibility for developing educational resources would be on the producers. Local governments would be responsible for implementing education programs.

Transitional Considerations

In Scenario 3, the transition could appear relatively seamless to residents and consumers, for the most part, since there would be little change to the core approach to the collection service provision, at least in some communities. However, the list of materials accepted for collection could change and generators would be subject to a higher level of anti-contamination programming. Further, some classes of generators would receive new recycling opportunities as a result of the parallel access requirement. Local governments would need to update their plans, programs and franchise / licensing agreements to comply with new requirements.

Collection service providers would need to transition their service offerings to comply with new agreements and new statutory requirements (e.g., parallel service requirements). MRF operators would also be required to comply with new certification, permit and contractual requirements.

One of the more significant transitional consideration would be the transfer of responsibility for processing agreements from collection service providers to producers. The transition would significantly change the operating context of MRFs in the state, which have traditionally operated on the spot market, and through agreements with individual collection service providers. In the EPR scenarios, MRFs would enter into longer-term contracts with PRO(s). The transition would also impact relationships between collection service providers and MRFs, particularly if the PRO(s) designates that material flow be directed from communities to specific MRF contractors, to ensure appropriate distribution of materials and allow for matching flows to capacity.

In order to achieve the potential benefits of these scenarios, DEQ would need to maximize its use of current authority, and new statutory authority would be required.

How Does Scenario 3 Relate to the RSC Desired Functions?

1. **Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**

Scenario 3 addresses this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data and by engaging producers to share responsibility in the recycling system. It would also incentivize the reduction of upstream impacts of the materials in the waste stream through the use of eco-modulated fees. Added financing and the provision of guaranteed end-markets would allow for a higher overall level of recovery, further optimizing benefits.

2. **Resiliency: Resiliently adapts to changes in material supply and end-market demand**

Scenario 3 significantly improves resiliency, as it ensures that producers absorb the risk related to changes in end-market demand, thus stabilizing the collection and processing system. The scenario could be further designed for resiliency, if this function is considered when developing the process for adding / removing materials from the core list of recyclable materials, and when developing new implementing regulations related to MRF operations.

3. **Financing: Provides sustainable and equitable financing for stable operations and capital investments**

Scenario 3 meets this function by providing a stable, consistent and enforceable financing mechanism. Producer financing for transportation, processing and marketing is paired with ratepayer financing for collection. This presents a more diverse pool of funding than the other scenarios

4. **Integration: Integrates system components to achieve overall system goals**

Scenario 3 meets this function by better integrating MRFs into the system, by engaging producers, and by creating additional focus on end-market development to integrate end-markets into the system. DEQ plays a critical role in system integration, by coordinating the responsibilities of local governments and producers.

5. **Upstream: Includes mechanisms to reduce upstream impacts of materials**

Scenario 3 incorporates eco-modulated fees, which would serve as a tool to incentivize reduced upstream impacts of materials. Producers would fund waste reduction/prevention efforts, and obligations to reduce upstream impacts directly would further align with this function.

6. **Equity: Designs for equity – examining the burdens and benefits across the state**

Like the publicly-managed scenarios, Scenario 3 addresses this function by requiring DEQ to establish equity standards, and integrate those standards into permitting and decision-making activities, including approval of PRO(s) program plans. It also ensures that recycling service is provided across the state through parallel service requirements.

7. **Shared Responsibility: Shares responsibility for the system among players including residents and businesses, producers, state and local governments, and recycling industry**

Scenario 3 shares responsibility among the players in the system. Residents and businesses must separate recyclables for collection, and collection service providers must provide recycling services. Financial and operational responsibilities are shared, since ratepayers finance and local governments operationalize collection, while producers finance and operationalize the post-collection system.

8. **Goals: Uses goals and metrics to measure progress and support ongoing improvement**

Scenario 3 would meet this function by establishing performance goals for producers and by creating a planning and reporting process to track progress against those goals.

9. **Education: Educates and encourages residents and businesses to use the system properly**

Scenario 3 would meet this function by requiring either local governments or the producers (depending on the scenario) to engage in education programs.

10. **Understanding Impacts: Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles**

Scenario 3 would include mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. It would not otherwise engage the public to understand the life-cycle impacts of materials.

11. **Material Selection: Identifies beneficial materials acceptable for collection programs**

Scenario 3 addresses this function by establishing a process for developing a core list of recyclables. DEQ would create the core list of recyclables based on its LCA database, and after consultation with producers and local governments.

12. **Collection: Collects clean, acceptable materials for processing**

Scenario 3 is designed to retain one of the core strengths of the current framework – efficient collection of recyclable materials. It would retain the collection system as it currently functions. It would also require that the entity responsible for collection implement best practices to reduce contamination, which would improve the quality of the material collected.

How Does Scenario 3 Relate to the RSC Desired Functions? Continued

13. Incoming Processing: Ensures processing facilities receive clean materials and in sufficient volumes

By mandating a core list of recyclables, and banning them from disposal, and centralizing control of the processing infrastructure, Scenario 3 would improve the likelihood that facilities receive sufficient quantities of materials for recycling. Requirements on local governments or producers to implement best practices to reduce contamination would improve the quality of incoming materials.

14. Outgoing Processing: Produces quality materials that reach end-markets

In Scenario 3, producers would require MRFs to meet processing standards to reduce contamination and improve outgoing material quality. The scenarios' elements that improve incoming material quality (as noted above) will improve outgoing material quality as well, and the inclusion of a MRF certification or permitting program in these scenarios could improve outgoing material quality through the operating standards imposed.

15. Downstream: Ensures materials are managed responsibly from collection through end-markets

In Scenario 3, oversight by DEQ and agreements between the PRO(s) and MRFs would address this function by setting criteria for acceptable downstream markets. In addition, the reporting required in these scenarios would improve transparency, which may foster more responsible management.

16. Accountability: Ensures all players in the system perform responsibly

Scenario 3 would require enhanced reporting that would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system through enforcement, if necessary.

Appendix F: Scenario 4 – Producer Responsibility with Local Control

Summary

Scenario 4 expands the concept of EPR to place financial responsibility for the recycling system on producers of designated recyclables (i.e., brand owners and retailers). Specific producer obligations would be established in authorizing legislation. Producers would likely comply through participation in one or more producer responsibility organizations, which would develop a program plan, set and collect fees from producers sufficient to fund the plan, and execute the plan. The authorizing legislation would also set additional requirements on other players in the system, including parallel access collection requirements and volume-based pricing mandates. Like Scenario 3, Scenario 4 would require producers to reduce upstream (pre-consumer) environmental impacts (for example, through disclosure and reduction of life-cycle impacts) and to provide financial support for litter abatement and waste reduction/prevention, in addition to recycling program costs, in order to capture the full spectrum of programs required to address the impacts of their products and packaging on the environment.

would also require producers to provide financial support for litter abatement, waste reduction / prevention, and upstream activities in addition to recycling program costs, in order to capture the full spectrum of programs required to address the impacts of their products and packaging on the environment.

Scenario 4 integrates the current Oregon framework's collection system into an EPR approach by placing financial responsibility for collection, as well as processing and marketing, on producers. That financial responsibility would also include public education recycling infrastructure investments, and litter abatement and waste reduction/prevention and upstream activities. In this scenario, local governments would continue to manage recycling collection programs, while the producers of designated recyclable materials would be required to manage transportation, processing, and marketing of residential- and commercially-generated recyclables, and to finance any costs of those services. This presumably would be done through contracts with MRFs.

Collection would continue to be organized as it is in the current Oregon framework, where local governments (cities/counties/regional governments) ensure the opportunity to recycle by establishing recycling programs that meet specific state requirements. Service would continue to be provided predominantly through private service providers, under franchise or licensing agreements. Collection would be enhanced through parallel access requirements that would ensure that recycling service is provided wherever solid waste service is offered, while local governments would be subject to additional obligations, including implementing best practices for education, addressing litter abatement, and other activities.

The recycling collection program costs would be reimbursed to local governments or collection service providers for the cost of implementing recycling collection, education and litter programs. Additionally, producers would cover the post-collections costs through MRF contracts, as discussed above.

The authorizing legislation would require producers, individually, or through participation in one or more PROs, to submit a program plan defining how they would meet their obligations. DEQ would have regulatory oversight through negotiation and approval of the plan, and periodic reviews, to ensure the obligations are being met and could undertake enforcement. DEQ could / would convene a Recycling Advisory Committee to advise this process. Producers would also be responsible for financing new system elements related to DEQ administration and LCA research, thus the additional funding sources required for Scenarios 1 and 2 would not be necessary.

Similar to Scenario 3, the producer fee structure would incorporate eco-modulation to incentivize DfE standards for product and packaging design.

Common Elements and Application for Scenario 4

- **Parallel access to recycling to expand access to recycling collection**
 - This element would be implemented through a requirement that collection service providers incorporate recycling service for any customer that is receiving solid waste services, including single family residential, multi-family, commercial and public space properties. Modeled on the current framework, the statute could require bundled services and pricing for all customers; producers would reimburse collection service providers or municipalities for those costs.
- **Mandatory variable rate (PAYT) pricing for services across all sectors (single family, multi-family, commercial) to incentivize waste prevention**
 - A new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services that provides less expensive service for those who generate less waste.
 - In Scenario 4, the variable rate pricing mandate would only apply to solid waste services, since recycling collection, transportation, processing and marketing costs would be the responsibility of producers.
- **MRF certification and reporting to improve environmental performance and transparency**
 - In Scenario 4, like the three previous scenarios, this element would be implemented through expanded DEQ regulatory authority, which would allow the agency to develop a MRF permitting program that would establish minimum operating and equity standards, and reporting requirements.
- **Material-specific life-cycle assessment database to support end-of-life and design for the environment-based decisions**
 - DEQ would conduct LCA research and maintain a database of results. DEQ would use that database to recommend appropriate EOL pathways for the materials studied, and to guide decisions related to producer plan elements such as eco-modulated fees and the core list of recyclables.
- **Statewide list of recyclables and ban on disposal of those items to provide consistency in programs across the state**
 - In Scenario 4, producers would propose a core list and DEQ would approve that list based on consistency with its LCA research.
- **Recycled-content requirements and/or incentives to support recycling markets**
 - The eco-modulated fee structure would incentivize the use of recycled content. In addition, the authorizing statute could set new requirements to implement this element by either specifying mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets, or authorizing DEQ to establish minimum recycled-content targets based on certain criteria, including strength of markets and market values.
- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety standards**
 - The authorizing statute would give DEQ the authority to set and enforce key performance standards for producers, including material-specific recycling rates, contamination rates, and equity and end-market EHS standards. In addition, equity standards would guide DEQ decision-making related to permitting / certification of MRFs. Local governments would be required to meet recycling collection targets, and to implement best practices to meet inbound contamination targets, either directly or through their collection service providers.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - Like all the other scenarios, in Scenario 4, the state would exercise existing authority related to false advertising claims to address products or packages that are labeled as “recyclable” but are not able to be recycled in Oregon. New statutory authority would allow the state to require consumer product manufacturers to label their products and packaging in accordance with the DEQ’s LCA-based guidance on end-of-life pathways. In addition to, or as an alternative, such labeling standards could be incentivized in the eco-modulated fee structure.
- **Market development activities**
 - Producers would be required to set aside a portion of the PRO(s) budget(s) and collected fees to invest in market development activities.

Common Elements and Application for Scenario 4 Continued

- **Addressing litter and upstream**
 - Establish requirements on producers to fund litter abatement and waste reduction / prevention and upstream activities.
- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

Benefits

The current collection system remains largely intact, thus this scenario would leverage the relative strength of that element of the existing framework. The current collection system would be further improved and integrated into the larger recycling system through the inclusion of any of the additional common elements, such as, parallel access to recycling, mandatory PAYT, a statewide list of recyclables and generator-facing contamination reduction programming.

The scenario enhances system optimization, integration and accountability by designating a responsible party for the post-collection segments of the recycling system (i.e., processing and end-market development). In EPR systems, producers tend to approach the recycling system as a supply chain, creating incentives for improved material quantity and quality among all participants.

Assigning responsibility for the post-collection system mitigates the risk and uncertainty associated with volatile recycling commodity markets and ensures an end-market for collected materials. This scenario would also facilitate responsible handling of materials as they flow downstream, increasing transparency of system costs and material flows and adding funding and technical support for end-market development. Reimbursement of collector-to-processor transportation costs (similar to Scenarios 2 and 3) would provide more equitable recycling access to all Oregonians regardless of their proximity to processing facilities. In addition, eco-modulated producer fee structures can incentivize upstream design changes and DfE choices for packaging producers.

The added responsibility for producers to finance the collection system, and for DEQ to work to harmonize that functionality in Scenario 4, would further enhance system integration and harmonization. Importantly, like in Scenario 3, this scenario would address one of the key challenges to Scenario 2 – DEQ's ability to fund and manage MRF contracts – by placing those responsibilities on producers (i.e., brands and retailers), through the use of a PRO(s). Scenario 4 would also relieve local governments and ratepayers of the financial burden of recycling collection and processing costs.

Tradeoffs and Challenges

This scenario represents a significant philosophical and operational shift in the approach to managing recycling within the state. Bringing producers, and their resources, into the framework will change existing business relationships and the industry dynamic and discourse. Implementation of this scenario would require building trust and understanding among the stakeholders on both sides. DEQ and a newly formed Recycling Advisory Committee would be in an important position to facilitate any such transitions and ensure that all voices are heard in the process.

In this scenario, DEQ would play a critical role in ensuring that local governments are fairly compensated for recycling collection costs, and that collection programs operated by local governments are consistent and integrated with the producer-managed processing system.

This scenario supplements EPR with a strong base public policy, to ensure that education and public engagement to understand the costs of recycling are bolstered.

Roles and Responsibilities

State Regulator (DEQ)

In Scenario 4, DEQ would maintain all of its current responsibilities, plus add the following:

- Negotiate and approve the producer program plans, review annually, and enforce if necessary, to ensure that the plan(s) meets statutory obligations and are aligned with the 2050 Vision.
- Conduct LCA research to determine optimal end-of-life pathways, by material type or category, maintain a database of results, and define factors to be used for eco-modulation in fee setting.
- Develop equity standards and incorporate into agency permitting and decision-making activities. These standards would / could trickle down to the local level into franchise agreements.
- Implement new policies, including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided.
 - Mandatory variable rate pricing for waste and recycling services for all commercial and residential generators.
- MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets and equity requirements.
- Convene a Recycling Advisory Group to inform the agency and provide a platform for discussing system needs and issues.
- Require local governments to implement recycling programs that meet policy objectives (see below).
- Collect cost information from local governments, determine producers' financial obligation and oversee reimbursement process.
- Work with producers and local governments to develop a common list of recyclable materials that must be collected in recycling programs across the state.
- Coordinate and oversee the use of producer-provided funding for litter abatement, waste reduction/prevention, and potentially some upstream activities. Much of this funding would likely be allocated to grants and/or contracts, for example, to reimburse local governments or other organizations for litter abatement efforts, or to fund waste prevention and reuse projects.

Producers, through a producer responsibility organization(s)

In Scenario 4, producers of packaging and printed paper (i.e., brands and retailers) would be required to manage the recycling processing and marketing system. Producers would work through one or more producer responsibility organizations to meet their obligations. The PRO(s) would be required to:

- Establish a fee structure that meets DEQ objectives, based on LCA research and DfE objectives.
- Report annually on program performance, fee structure and material flows.
- Implement research and development, infrastructure and end-market development activities as necessary.
- Fund litter abatement and waste reduction/prevention and upstream activities.
- Develop a five-year program plan to describe how obligations will be met, including the approach to agreements with MRFs, reimbursement of collection service provider transportation costs, producer fee structure, etc.; secure approval of plan from DEQ.
- Provide recycling processing and marketing services sufficient to manage residential and commercial recyclables in the state. Producers will contract with MRFs for processing, marketing and transportation so that collection service providers could deliver recyclables to facilities, pay no gate

fee, and receive a transportation reimbursement (a per-mile payment based on the number of miles from the collection route).

- Provide education and outreach tools and resources to local governments, businesses and collection service providers.
- Five-year program plan would include the approach to reimbursement of local government and collection service provider recycling costs.
- Five-year program plan would also include a proposed core list of recyclable materials designated for collection and recommended for ban from disposal. It should be noted, though, that in Scenarios 4 and 5, the PRO(s) would propose the list of recyclables designated for collection but that DEQ would be the entity to approve that list, potentially with the assistance of a Recycling Advisory Committee.

Local Government

In Scenario 4, local government's role would be similar to that in the current Oregon framework, as they would continue to have primary operational responsibility for implementing recycling collection programs. However, the specifics of those responsibilities would be adapted to the enhanced policy environment. Local governments would be required to:

- Plan and implement recycling programs that meet the following requirements:
 - Parallel access for recycling and waste for residents, businesses and in public spaces.
 - Collect only the common list of recyclables and deliver to processors consistent with the PRO(s) plan(s).
 - Implement best practices to reduce contamination.
 - Comply with cost and material flow reporting requirements.
 - Manage materials consistent with state guidance, based on LCA research.
- Execute education, outreach and enforcement efforts related to collection.
- Update franchise / license agreements to comply with new policy including parallel access, collection of the common list of recyclables, and reporting, and to require that collection service providers deliver materials in accordance with the PRO(s) plan(s).

Collector

The collectors' basic role would not change from the current framework, although their specific responsibilities would adapt to the requirements of their franchise or license agreements, as adjusted to reflect the enhanced policy environment. In this scenario, collectors would:

- Collect material in accordance with agreement or license with local government.
- Deliver material to MRF(s), as defined in franchise or license agreement.

In Scenario 4 collectors would no longer bill customers for recycling collection service, as those costs would be reimbursed by the PRO(s).

Processor

This scenario would structurally integrate MRFs into the framework through agreements with the PRO(s), and certification or permitting requirements that would establish operating and equity standards, reporting requirements, contamination targets and end-market criteria. In this scenario, MRFs would:

- Provide service in accordance with the PRO(s) contract(s).
- Comply with state regulatory / reporting standards defined in certification or permit.

Financing

Scenario 4 would be fully financed by producers, through one or more PROs, as defined in the legislation. Ratepayers would continue to pay for solid waste collection and disposal, while producers would cover the cost of recycling education, collection (including carts), transportation, processing and marketing of recyclables, plus litter abatement and waste reduction / prevention and upstream-related activities..

Local governments would continue to set rates for collection services through franchise / licensing agreements, however, ratepayers would only pay the portion of the rate that related to solid waste and organics collection and disposition. The cost of recycling and litter abatement would be split out and reimbursed by the PRO(s), through DEQ. The local government would report cost to DEQ who would then direct the PRO(s) to reimburse the local government or the collection service provider. DEQ would review local government submissions to ensure they are reasonable and that no errors have been made. The solid waste fees paid by ratepayers would be based on variable rate pricing (PAYT).

Producers would finance and coordinate the transportation, processing and marketing of recyclables post-collection, as well as research and development, infrastructure and end-market development, with research and development, infrastructure, and end-market development projects being financed by the PRO(s) through a set percentage of the PRO(s) budget. Producers would also fund litter prevention and control, waste reduction/prevention and upstream activities. The program plan might designate activities planned to utilize those funds, when implementation of those activities is the responsibility of the producers (e.g., upstream impact reduction activities).

The PRO(s) would be responsible for funding additional administrative oversight and LCA research performed by DEQ to inform EOL decision-making and factors for setting eco-modulated fees. The level of funding required for these tasks, and the mechanism for transferring that funding, would be either set in the statute or negotiated as a part of the program plan.

Each producer would pay fees into a PRO(s), which would be responsible for meeting the statutory obligation. The fees assessed by the PRO(s), and paid by producers, would utilize an eco-modulated approach, such that discounts would be given to materials that meet recycling and DfE objectives, as defined by DEQ research. Penalties will be paid for materials that disrupt the recycling system or have high environmental impacts. This would result in different per-unit costs for different materials and packaging formats based on their environmental impact and impact to the recycling system. This would provide clear feedback to producers to incentivize DfE considerations, such as clean production and supply chain practices, detoxification, decarbonization, reduction in material inputs, use of recyclable materials, and incorporation of recycled content. The eco-modulated rate schedule would be a part of the program plan subject to approval by DEQ.

Operations

In Scenario 4, collection service would continue to function similar to the current Oregon framework. Service would be arranged and implemented primarily through franchise / licensing agreements between local governments and private service providers or provided directly (in limited instances). In areas where franchise or license agreements to do not include multi-family, commercial or public space properties, an expansion of those agreements, or new service agreements, would be required to implement the parallel service requirement. In this scenario, the franchise or licensing agreements would need to be updated as described above (see Local Government Responsibilities).

Collection systems could also include drop-off collection. This service could recognize materials that are also designated for curbside collection, as well as items such as plastic film and Styrofoam that are not conducive to on-route collection. Drop-off collection could be a complement to an established curbside collection

program or established as a stand-alone collection option in areas where no curbside solid waste collection is provided.

The PRO(s) would define certain operational provisions within the program plan, which would be incorporated into contracts between the PRO(s) and local governments, and between local governments and their collection service providers. Such provisions would include, but not be limited to:

- The list of acceptable materials.
- Public education and best practices to combat contamination.
- Pre-approval for significant program changes
- Instructions on MRF(s) receiving collected materials.

The franchise or licensing agreements would need to be updated to incorporate these conditions, as well as other new requirements as described above (see Local Government Responsibilities).

The PRO(s) / local government agreements would include other provisions defining terms for reimbursement, which could include conditions such as a cap in per-household cost, pre-approval for program investments, or penalties for high inbound contamination rates. All such conditions would require approval from DEQ as a part of the program plan and could include review by a Recycling Advisory Committee through the plan approval process. Local governments would report program cost to the state, who would determine the financial obligation of the PRO(s).

The PRO(s) would contract with MRFs to process and market program material. The contracts would set quality standards (inbound and outbound contamination rates) and specify end-market EHS standards. Scenario 4 would include a requirement that collection service providers be reimbursed for transportation costs on a per-mile basis, based on the distance from a collection route. As such, the contracts would allow collection service providers to deliver materials with no gate fee and have their transportation costs covered, to ensure cost-equivalency in all parts of the state.

Governance

The DEQ would oversee producer implementation of their plans and enforce as necessary. It would also extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

The governance model is similar to the current framework in that it relies primarily on DEQ to implement and enforce core elements, and local government implementation through collection. Local governments' approach to compliance with new elements would be spelled out in local solid waste plans and approved by DEQ. Franchise and license agreements would be a key tool for implementing the collection elements of these scenarios. The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to enable DEQ to implement the new elements of these scenarios highlighted earlier in this section (e.g., core recyclables list and disposal ban, parallel recycling requirements, mandatory variable rate pricing).

Additional statutory authority would be required to assign producers responsibility for processing and marketing of recyclables and financial responsibility for systemwide recycling and litter abatement activities, and to implement additional program requirements (e.g., infrastructure and market development activities).

The authorizing legislation would define key elements in the producers' governance structure. For example, the legislation would authorize either one or multiple PROs. It could also define whether the PRO(s) should

be not-for-profit, or for-profit, and what the board structure would be (e.g., only producers vs. producers and other stakeholders).

The scenario would require producers and / or their PRO(s) to develop and execute a program plan. The plan would present critical details of program implementation, finance and operations and would be submitted by the PRO(s). DEQ would retain ultimate governance over the programs, with regulatory oversight and enforcement authority over the producers through the program plan approval and review process, to ensure that the producers meet their statutory obligations.

The program plan(s) for Scenario 4 would include, but not be limited to:

- Material-specific recovery targets and plans to meet them.
- The list of acceptable recyclables.
- Provisions of reimbursement agreements with local governments, including contamination standards.
- Provisions of agreements with MRFs, including standards for inbound and outbound contamination and end-markets.
- A fee structure that incorporates DEQ guidance on factors reflected in eco-modulation.

The Scenario could / would add a Recycling Advisory Committee to advise the agency on key issues.

Common Elements Recommended for All EPR Models Applied to Scenario 4

- Scope of obligated materials.
 - The enabling legislation would need to define obligated producers based on a scope of obligated materials. Typically, EPR programs include packaging only, packaging and printed paper (to include junk mail, newspapers, etc.), or packaging, printed paper and like products (including things like resealable bags, or aluminum foil trays that may or may not have been packaging before disposal). Given that it is likely that collection programs already include products that are similar to packaging, Oregon may want to consider including printed paper and like products. Furthermore, consideration should be given to LCA data in developing the list of obligated materials.
- Producers would be required to address litter abatement as well as recycling. Like in Scenario 3, producers in Scenario 4 would finance litter abatement, though addressing litter abatement efforts would be handled by local or state government.
- Producers would be required to finance waste reduction/prevention efforts, potentially through a fund to be administered by DEQ to support local implementation.
- Regulatory authority defines optimal EOL pathway.
 - To ensure the EPR programs are designed with life-cycle impacts in mind, DEQ would be granted authority to designate the appropriate end-of-life pathway for each material type or category based on LCA data.
- Eco-modulated fees set by PRO(s) but informed by regulatory authority based on LCA / DfE factors
 - To capture the potential benefit of reducing upstream impacts through EPR, it is imperative that eco-modulated fees are used to incentivize better material use and product or package design. In all scenarios, the eco-modulation formulas would be guided by LCA data, as defined by DEQ.
- Producers would be required to finance and implement upstream (pre-consumer) impact reduction efforts, potentially subject to standards set by DEQ, or proposed by the PRO and approved by DEQ. Impact reduction efforts could include, as example, the disclosure of life-cycle environmental impacts, detoxification, decarbonization, or other design, supply chain, and/or production changes that reduce environmental impacts.

- Mechanism for investment / coordination in infrastructure and market development.
 - PRO(s) would invest in infrastructure and end-markets by allocating a portion of the producer fees to these activities.
- Education / outreach clearly defined and educational resources provided by PRO(s).
 - Responsibility for developing educational resources would be on the producers. In Scenario 4, local governments would be responsible for implementing education programs.

Transitional Considerations

In Scenario 4, the transition could appear relatively seamless to residents and consumers, for the most part, since there would be little change to the core approach to the collection service provision, at least in some communities. However, the list of materials accepted for collection could change and generators would be subject to a higher level of anti-contamination programming. Further, some classes of generators would receive new recycling opportunities as a result of the parallel access requirement. Local governments would need to update their plans, programs and franchise / licensing agreements to comply with new requirements. In Scenario 4, this would include provisions of local governments contracts with the PRO(s) or DEQ for reimbursement.

Collection service providers would need to transition their service offerings to comply with new agreements, and new statutory requirements (e.g., parallel service requirements). MRF operators would also be required to comply with new certification or permit requirements.

One of the more significant transitional consideration in Scenario 4 would be the transfer of responsibility for processing agreements from collection service providers to producers. The transition would significantly change the operating context of MRFs in the state, which have traditionally operated on the spot market, and through agreements with individual collection service providers. In this scenario, MRFs would enter into longer-term contracts with the PRO(s). The transition would also impact relationships between collection service providers and MRFs, particularly if the PRO(s) designates that material flow be directed from communities to specific MRF contractors, to ensure appropriate distribution of materials and allow for matching flows to capacity.

Implementing the producers' financial responsibility for collection in Scenario 4 would require a new mechanism for cost reporting and reimbursement for local governments. Franchise agreements would need to separately account for the costs of recycling collection and, where applicable, education, litter abatement and best practices to reduce contamination. Those costs would then need to be submitted to DEQ for reimbursement by the PRO(s). Franchise agreement structures may need to be adjusted to allow for that reimbursement, either to the local government or directly to the collection service provider.

How Does Scenario 4 Relate to the RSC Desired Functions?

1. **Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**

Scenario 4 address this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data, and by engaging producers to share responsibility in the recycling system. It would also incentivize the reduction of upstream impacts of the materials in the waste stream through the use of eco-modulated fees. Added financing and the provision of guaranteed end-markets would allow for a higher overall level of recovery, further optimizing benefits.

2. **Resiliency: Resiliently adapts to changes in material supply and end-market demand**

Scenario 4 significantly improves resiliency, as it ensures that producers absorb the risk related to changes in end-market demand, thus stabilizing the collection and processing system. The scenario could be further designed for resiliency, if this function is considered when developing the process for adding / removing materials from the core list of recyclable materials, and when developing new implementing regulations related to MRF operations.

3. **Financing: Provides sustainable and equitable financing for stable operations and capital investments**

Scenario 4 meets this function by providing a stable, consistent and enforceable financing mechanism. Producer financing covers collection, transportation, processing and marketing.

4. **Integration: Integrates system components to achieve overall system goals**

The EPR scenarios meet this function by better integrating MRFs into the system, by engaging producers, and by creating additional focus on end-market development to integrate end-markets into the system. In Scenario 4, the PRO(s) more actively focuses on system integration, as they take on full financial responsibilities.

5. **Upstream: Includes mechanisms to reduce upstream impacts of materials**

Scenario 4 incorporates eco-modulated fees, which would serve as a tool to incentivize reduced upstream impacts of materials. Producers would fund waste reduction/prevention efforts, and obligations to reduce upstream impacts directly would further align with this function.

6. **Equity: Designs for equity – examining the burdens and benefits across the state**

Like the publicly-managed scenarios, Scenario 4 addresses this function by requiring DEQ to establish equity standards, and integrate those standards into permitting and decision-making activities, including approval of PRO(s) program plans. It also ensures that recycling service is provided across the state through parallel service requirements.

7. **Shared Responsibility: Shares responsibility for the system among players including residents and businesses, producers, state and local governments, and recycling industry**

Scenario 4 shares responsibility among the players in the system, though the extent of responsibilities held by different parties differs. In Scenario 4, residents and businesses must separate recyclables for collection, and collection service providers must provide recycling services. Local governments retain operational responsibilities for collection, but financial responsibility for collection is taken on by producers, and they are also responsible for financial and operational elements of the post-collection system.

8. **Goals: Uses goals and metrics to measure progress and support ongoing improvement**

Scenario 4 would meet this function by establishing performance goals for producers and by creating a planning and reporting process to track progress against those goals.

9. **Education: Educates and encourages residents and businesses to use the system properly**

Scenario 4 would meet this function by clearly requiring either local governments or the producers (depending on the scenario) to engage in education programs.

10. **Understanding Impacts: Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles**

Scenario 4 includes mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. They do not otherwise engage the public to understand the life-cycle impacts of materials. Recycling costs might become more or less visible to the public: they would be included in annual performance reports by the PRO, but no longer included in collection bills.

11. **Material Selection: Identifies beneficial materials acceptable for collection programs**

Scenario 4 addresses this function by establishing a process for developing a core list of recyclables. In Scenario 4, the PRO(s) proposes a core list in its program plan and DEQ would review and approve the list using the LCA database as a key data source in its evaluation.

12. **Collection: Collects clean, acceptable materials for processing**

Scenario 4 is designed to retain one of the core strengths of the current framework – efficient collection of recyclable materials. The scenario would retain the collection system as it currently functions. Scenario 4 also requires that the entity responsible for collection implement best practices to reduce contamination, which would improve the quality of the material collected.

How Does Scenario 4 Relate to the RSC Desired Functions? Continued

13. Incoming Processing: Ensures processing facilities receive clean materials and in sufficient volumes

By mandating a core list of recyclables, and banning them from disposal, , and centralizing control of the processing infrastructure, Scenario 4 improves the likelihood that facilities receive sufficient quantities of materials for recycling. Requirements on local governments or producers to implement best practices to reduce contamination would improve the quality of incoming materials.

14. Outgoing Processing: Produces quality materials that reach end-markets

In Scenario 4, producers would require MRFs to meet processing standards to reduce contamination and improve outgoing material quality. The scenarios' elements that improve incoming material quality (as noted above) will also improve outgoing material quality as well, and the inclusion of a MRF certification or permitting program in these scenarios could improve outgoing material quality through the operating standards imposed.

15. Downstream: Ensures materials are managed responsibly from collection through end-markets

In Scenario 4, oversight by DEQ and agreements between the PRO(s) and MRFs would address this function by setting criteria for acceptable downstream markets. In addition, the reporting required in this scenario would improve transparency, which may foster more responsible management.

16. Accountability: Ensures all players in the system perform responsibly

Scenario 4 requires enhanced reporting that would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system through enforcement, if necessary.

Appendix G: Scenario 5 – Full Producer Responsibility with Optional Local Involvement

Summary

In Scenario 5, specific producer obligations would be established in authorizing legislation. Producers would likely comply through participation in one or more PROs, which would develop a program plan, set and collect fees from producers sufficient to fund the plan, and execute the plan. The authorizing legislation would also set additional requirements on other players in the system, including parallel access collection requirements, volume-based pricing mandates, effective sorting requirements on processors and EHS requirements of end-markets. Like the other EPR scenarios, Scenario 5 also requires producers to provide financial support for litter abatement and waste reduction / prevention and upstream-related activities, in addition to recycling program costs, so that the full spectrum of program options available are utilized to address the impacts of products and packaging on the environment.

Scenario 5 represents the broadest approach to EPR presented. It requires producers to finance *and* manage the entire recycling system for obligated recyclables, including public education, collection (curbside and drop-off), transportation, processing and marketing of recyclables, as well as necessary recycling infrastructure investments, litter abatement and waste reduction/prevention and upstream activities. Producers, through a PRO(s), would implement a comprehensive recycling program through a series of contractual arrangements with collectors and MRFs. Local governments would no longer have operational responsibility or authority over their programs, although they could choose to serve as collectors, with the authority to assign collection duties to franchised or permitted private collectors as subcontractors. In this case, local governments would serve as contractors to the PRO(s), in order to maintain a role in the system.

The authorizing legislation would require producers, individually, or through participation in one or more PROs, to submit a program plan defining how they would meet their obligations. DEQ would have regulatory oversight through negotiation and approval of the plan, as well as periodic reviews, to ensure the obligations are being met. DEQ could also undertake enforcement. DEQ could / would convene a Recycling Advisory Committee to advise this process. Further, producers would be responsible for financing new system elements related to DEQ administration and LCA research. As such, the additional funding sources required for Scenarios 1 and 2 would not be necessary.

The producer fee structure would incorporate eco-modulation to incentivize DfE standards for products and packaging design. The eco-modulation fee structure would reflect the results of DEQ's LCA research.

Common Elements and Application for Scenario 5

- **Parallel access to recycling to expand access to recycling collection**
 - In Scenario 5, producers would be required to provide recycling service to single family, multi-family, commercial and public properties that is consistent with the level of solid waste service provided in their locality.
- **Mandatory variable rate (PAYT) pricing for services across all sectors (single family, multi-family, commercial) to incentivize waste prevention**
 - In Scenario 5, a new statutory requirement would be enacted to require collection service providers to implement variable pricing for solid waste services that provides less expensive service for those who generate less waste. The variable rate pricing mandate would only apply to solid waste services, since recycling collection, transportation, processing and marketing costs would be the responsibility of producers.
- **MRF certification and reporting to improve environmental performance and transparency**
 - In Scenario 5, like all the other scenarios, this element would be implemented through expanded DEQ regulatory authority, which would allow the agency to develop a MRF permitting program that would establish minimum operating and equity standards, and reporting requirements.
- **Material-specific life-cycle assessment database to support end-of-life and design for the environment-based decisions**
 - In Scenario 5, DEQ would conduct LCA research and maintain a database of results. DEQ would use that database to recommend appropriate EOL pathways for the materials studied, and to guide decisions related to producer plan elements such as eco-modulated fees and the core list of recyclables.
- **Statewide list of recyclables and ban on disposal of those items to provide consistency in programs across the state**
 - In Scenario 5, producers would propose a core list and DEQ would approve that list based on consistency with its LCA research.
- **Recycled-content requirements and/or incentives to support recycling markets**
 - The eco-modulated fee structure would incentivize the use of recycled content. In addition, the authorizing statute could set new requirements to implement this element by either specifying mandatory minimum recycled-content targets for the products and packaging necessary to support struggling markets, or authorizing DEQ to establish minimum recycled-content targets based on certain criteria, including strength of markets and market values.
- **Establishment of enforceable performance standards, including material-specific recycling rates, contamination rates, equity standards, and minimum end-market environmental, health and safety standards**
 - The authorizing statute would give DEQ the authority to set and enforce key performance standards for producers, including material-specific recycling rates, contamination rates and equity and end-market EHS standards. In addition, equity standards would guide DEQ decision-making related to permitting / certification of MRFs. In Scenario 5, producers would be required to meet recycling collection targets, and to implement best practices to meet inbound contamination targets, either directly or through their collection service providers.
- **Labeling requirements to facilitate appropriate consumer behavior and avoid contamination**
 - Like all the other scenarios, in Scenario 5, the state would exercise existing authority related to false advertising claims to address products or packages that are labeled as “recyclable” but are not able to be recycled in Oregon. New statutory authority would allow the state to require consumer product manufacturers to label their products and packaging in accordance with the DEQ’s LCA-based guidance on end-of-life pathways. In addition to, or as an alternative, such labeling standards could be incentivized in the eco-modulated fee structure.
- **Market development activities**
 - Producers would be required to set aside a portion of the PRO(s) budget(s) and collected fees to invest in market development activities.
- **Addressing litter and upstream**
 - Establish requirements on producers to fund litter abatement and waste reduction / prevention and upstream activities.
- **Expand the bottle bill to include wine and spirits**
 - An amendment to the statute would be enacted to expand the bottle bill to include beverage containers used to package wine and spirits, most notably glass containers.

Benefits

Scenario 5 enhances system optimization, integration and accountability by designating a responsible party for all segments of the recycling system (i.e. collection, processing and end-market development). In this system, producers would approach the recycling system as a supply chain, creating incentives for improved material quantity and quality among all participants. With producer costs including collection and transportation costs, this scenario would provide more equitable recycling access to all Oregonians regardless of their population density or proximity to processing facilities.

Assigning responsibility for the recycling system reduces the cost burden on ratepayers and local governments by transferring the costs of recycling collection and processing to producers. This scenario would also facilitate responsible handling of materials as they flow downstream, increasing transparency of system costs and material flows and adding funding and technical support for end-market development. In addition, eco-modulated fee structures could incentivize upstream design changes and DfE choices for packaging producers.

Scenario 5 would likely see the greatest impact of integration, as one entity would be central to the financing and coordination of the entire system. Scenario 5 would address one of the key challenges to Scenario 2 – DEQ’s ability to fund and manage MRF contracts – by placing those responsibilities on producers (i.e., brands and retailers), through the use of a PRO(s).

Tradeoffs and Challenges

This scenario represents a significant philosophical and operational shift in the approach to managing recycling within the state. Bringing producers, and their resources, into the framework will change existing business relationships and the industry dynamic and discourse. Scenario 5 would require local governments to step back from their traditional role in financing and managing recycling programs but would allow them to continue to participate as service providers.

Implementation of this scenario would require building trust and understanding among the stakeholders on both sides. DEQ and a newly formed Recycling Advisory Committee would be in an important position to facilitate any such transitions and ensure that all voices are heard in the process. In this scenario, DEQ would play a critical oversight role to ensure that producers meet their statutory obligations.

Roles and Responsibilities

State Regulator (DEQ)

In Scenario 5, DEQ would maintain all of its current responsibilities and assume the following:

- Negotiate and approve the PRO(s) program plan(s), reviewing it annually and enforcing it, if necessary, to ensure the plan(s) meets statutory obligations and is aligned with the 2050 Vision.
- Conduct LCA research to determine optimal EOL pathways, by material type or category, maintain a database of results, and define factors to be used for eco-modulation in fee setting.
- Develop equity standards and incorporate into agency permitting and decision-making activities, ensuring they are reflected in PRO service contracts as a condition for program plan approval.
- Implement new policies, including:
 - Parallel access to recycling, requiring that recycling service is provided everywhere waste collection is provided.
 - Mandatory variable rate pricing for waste and recycling services for all commercial and residential generators.
- MRF certification or permit program that establishes minimum operating standards, reporting requirements, contamination targets and equity requirements.

- Convene a Recycling Advisory Group to inform the agency and provide a platform for discussing system needs and issues.
- Coordinate and oversee the use of producer-provided funding for litter abatement, waste reduction/prevention, and potentially some upstream activities. Much of this funding would likely be allocated to grants and/or contracts, for example, to reimburse local governments or other organizations for litter abatement efforts, or to fund waste prevention and reuse projects.

Producers, through a producer responsibility organization(s)

In Scenario 5, producers of packaging and printed paper (i.e., brands and retailers) would be required to manage the entire recycling system. Producers would work through one or more producer responsibility organizations to meet their obligations. The PRO(s) would be required to:

- Establish a fee structure that meets DEQ objectives, based on LCA research and DfE objectives.
- Report annually on program performance, fee structure and material flows.
- Implement research and development, infrastructure and end-market development activities as necessary.
- Fund litter abatement and waste reduction / prevention and upstream activities.
- Develop a five-year program plan and secure approval of that plan from DEQ. The plan will include:
 - Proposed core list of recyclable materials designated for collection and recommended for ban from disposal.
 - Material-specific recycling targets and how they will be met.
 - The approach to agreements with collectors, including contamination targets and best practices to reduce contamination.
 - The approach to agreements with MRFs, including inbound and outbound contamination targets and acceptable end-markets.
 - Plan(s) for litter abatement and waste reduction / prevention and upstream activities.
 - Producer fee structure.
 - Other provisions required by DEQ.
- Five-year program plan would include a proposed core list of recyclable materials designated for collection and recommended for ban from disposal. It should be noted, though, that in Scenario 5, the PRO would propose the list of recyclables designated for collection but that DEQ would be the entity to approve that list, potentially with the assistance of a Recycling Advisory Committee.
- Provide recycling collection services to all single family, multi-family, commercial, and public space properties co-located and commensurate with the solid waste services at those properties.
- Provide recycling processing and marketing services sufficient to manage residential and commercial recyclables in the state by contracting with MRFs for processing and marketing.
- Execute education and outreach programs targeting residents, businesses and collection service providers.

Local Government

In Scenario 5, each local government could choose to have no role in the recycling program or could choose to serve as a collector for the producer-managed program. If a local government chooses to participate, it would enter into an agreement to provide collection services to the PRO(s). It could then subcontract those services to a collection service provider. Local governments could also completely “opt-out” of the system. If they chose to do so, they would operate as per new policy requirements (e.g., parallel access to recycling and PAYT) and receive no funding from producers.

Local governments could also partner with the PRO(s) on educational efforts relevant to the system, though the PRO(s) would be the lead when it comes to determining education and communications efforts and resources.

Collector

In Scenario 5, collectors would either contract either directly with the PRO(s), with a local government who contracted with the PRO(s) or with a local government that has completely opted out of the system. In the first two instances, the collector would be required to meet the collection program requirements defined by the PRO(s), in accordance with the plan approved by DEQ. If a local government opts out of program responsibility, the PRO(s) would be free to contract with any collector. If a local government opts out of the system entirely collectors would contract with local governments consistent with new policy requirements (e.g., parallel access to recycling and PAYT).

Processor

Scenario 5 would structurally integrate MRFs into the framework through agreements with the PRO(s), and via certification or permitting requirements that would establish operating and equity standards, reporting requirements, contamination targets and end-market criteria. In these scenarios, MRFs would:

- Provide service in accordance with the PRO(s) contract(s).
- Comply with state regulatory / reporting standards defined in certification or permit.

Financing

In Scenario 5, producers would be responsible for funding and managing the entire recycling system (through contracts with service providers), including litter abatement. Local governments that opt to contract with the PRO(s) as collection service providers could then subcontract with private collectors to execute the contractual requirements.

Producers would finance and coordinate the transportation, processing and marketing of recyclables post-collection, as well as research and development, infrastructure and end-market development. Research and development, infrastructure, and end-market development projects would be financed by the PRO(s) through a set percentage of the PRO(s) budget. Producers would also fund litter prevention and control, waste reduction/prevention and upstream activities. The program plan would designate activities planned to utilize those funds.

The PRO(s) would be responsible for funding additional administrative oversight and LCA research performed by DEQ to inform EOL decision-making and factors for setting eco-modulated fees. The level of funding required for these tasks, and the mechanism for transferring that funding, would be either set in the statute, or negotiated as a part of the program plan.

Each producer would pay fees into a PRO(s), which would be responsible for meeting the statutory obligation. The fees assessed by the PRO(s), and paid by producers, would utilize an eco-modulated approach, such that discounts would be given to materials that meet recycling and DfE objectives, as defined by DEQ research. Penalties will be paid for materials that disrupt the recycling system or have high environmental impacts. This would result in different per-unit costs for different materials and packaging formats based on their environmental impact and impact to the recycling system. This would provide clear feedback to producers to incentivize DfE considerations such as clean production and supply chain practices, detoxification, decarbonization, reduction in material inputs, use of recyclable materials, and incorporation of recycled content. The eco-modulated rate schedule would be a part of the program plan subject to approval by DEQ.

This financing arrangement would allow for equal access to recycling for all parts of the state. There would be no barriers (cost or otherwise) related to population density or distance between route and processors.

Operations

In Scenario 5, producers would manage the collection and processing system through contractual agreements. Local governments would no longer have direct authority or the obligation to design and implement recycling programs.

To operationalize its collection responsibility, the PRO(s) would directly contract for collection services. Local governments would have first right of refusal to act as a collector, under contract with the PRO(s). Local governments could then subcontract to private collection service providers. The template of the contract between the PRO(s) and local governments would be a part of the program plan, thus would be reviewed by DEQ. It would likely include a pre-determined, per-household compensation rate based on key cost factors such as size and geography of a community. The compensation rate would likely be determined through an independent, PRO(s)-commissioned study of program costs in the state, and would be included in the program plan, requiring DEQ approval. This would be revisited periodically to adjust to changing conditions.

Collection systems could also include drop-off collection. This service could recognize materials that are also designated for curbside collection, as well as items such as plastic film and Styrofoam that are not conducive to on-route collection. Drop-off collection could be a complement to an established curbside collection program or established as a stand-alone collection option in areas where no curbside solid waste collection is provided.

Franchise or license agreements would continue to govern solid waste and organic waste (yard and food waste) collection and disposition and could continue to include recycling services if a local government chose to serve as a collector for the PRO(s).

If the local government elects not to engage in collection, the PRO(s) would likely conduct an open solicitation for collection service in that community, defining the scope of work as needed to achieve the objectives of the program plan. In this case, there would be no bundling of recycling with other solid waste collection services. Recycling would be split off and handled separately between the PRO(s) and private service provider(s).

In either instance, like all the scenarios, solid waste service would be required to use variable rate pricing.

The PRO(s) would contract with MRFs to process and market program material. The contracts would set quality standards (inbound and outbound contamination rates) and specify end-market EHS standards. As noted above, Scenario 5 would result in equivalent access to processing facilities for all Oregonians.

Governance

In Scenario 5, DEQ would oversee producer implementation of their plans and enforce as necessary. It would also extend its regulatory authority to certify or permit MRFs, and to enhance reporting requirements on local governments, collection service providers and MRFs to get a better understanding of material flows and, where possible, costs.

The governance model continues to rely on DEQ to implement and enforce key elements but shifts responsibility to the producers for management and execution of key programs and activities. Additional statutory authority would be required to assign producers financial and operational responsibility for recycling, litter abatement and waste reduction/prevention and upstream activities, and to implement additional program requirements. (Responsibility might be limited to financial responsibility for certain

activities, such as litter abatement and waste prevention.) The Opportunity to Recycle Act would remain in place, though an amendment to the act, or a separate statute, would be required to assign producers responsibility for providing recycling opportunities, and to enable DEQ to implement the new elements of this scenario highlighted previously (e.g., disposal bans, and mandatory variable rate pricing). Material flows and costs would be tracked through PRO(s) reporting responsibilities. Local governments would bear no responsibility for recycling program implementation, unless they chose to provide collection and education services to the PRO.

The authorizing legislation would define key elements in the producers' governance structure. For example, the legislation would authorize either one or multiple PROs. It could also define whether the PRO(s) should be not-for-profit, or for-profit, and what the board structure would be (e.g., only producers vs. producers and other stakeholders).

Scenario 5 requires producers and / or their PRO(s) to develop and execute a program plan. The plan would present critical details of program implementation, finance and operations and would be submitted by the PRO(s). DEQ would retain ultimate governance over the program with regulatory oversight and enforcement authority over the producers through the program plan approval and review process, to ensure the producers meet their statutory obligations.

The program plan(s) for Scenario 5 would include, but not be limited to:

- Material-specific recovery targets and plans to meet them.
- The list of acceptable recyclables.
- Provisions of agreements with collectors, including contamination standards.
- Provisions of agreements with MRFs, including standards for inbound and outbound contamination and end-markets.
- A fee structure that incorporates DEQ guidance on factors reflected in eco-modulation.

Scenario 5 could / would add a Recycling Advisory Committee to inform the agency on key issues.

Common Elements Recommended for Scenario 5

- Scope of obligated materials
 - For Scenario 5, the enabling legislation would need to define obligated producers based on a scope of obligated materials. Typically, EPR programs include packaging only, packaging and printed paper (to include junk mail, newspapers, etc.), or packaging, printed paper and like products (including things like resealable bags, or aluminum foil trays that may or may not have been packaging before disposal). Given that it is likely that collection programs already include products that are similar to packaging, Oregon may want to consider including printed paper and like products. Furthermore, consideration should be given to LCA data in developing the list of obligated materials.
- Producers would have financial and operational responsibility for litter abatement.
- Producers would be required to finance waste reduction/prevention efforts, potentially though a fund to be administered by DEQ to support local implementation.
- Regulatory authority defines optimal EOL pathway.
 - To ensure the EPR programs are designed with life-cycle impacts in mind, DEQ would be granted authority to designate the appropriate end-of-life pathway for each material type or category based on LCA data.
- Eco-modulated fees set by PRO(s) but informed by regulatory authority based on LCA / DfE factors.

- To capture the potential benefit of reducing upstream impacts through EPR, it is imperative that eco-modulated fees are used to incentivize better material use and product or package design. In all scenarios, the eco-modulation formulas would be guided by LCA data, as defined by DEQ.
- Producers would be required to finance and implement upstream (pre-consumer) impact reduction efforts, potentially subject to standards set by DEQ, or proposed by the PRO and approved by DEQ. Impact reduction efforts could include, as example, the disclosure of life-cycle environmental impacts, detoxification, decarbonization, or other design, supply chain, and/or production changes that reduce environmental impacts.
- Mechanism for investment / coordination in infrastructure and market development.
 - PRO(s) would invest in infrastructure and end-markets by allocating a portion of the producer fees to these activities.
- Education and outreach clearly defined and educational resources provided by PRO(s).
 - Responsibility for developing educational resources and executing the education and outreach responsibilities would be on the producers, though the PRO(s) could partner with local governments on educational outreach efforts.

Transitional Considerations

The transition to Scenario 5 could be apparent to residents and consumers, since assigning collection responsibility to producers may mean a change in service providers for residential and commercial customers. Collection service providers would need to transition their service offerings to comply with new agreements with the PRO(s), either through local governments, or directly. MRF operators would also be required to comply with new certification or permit requirements and contractual agreements with the PRO(s). Transitioning to producer responsibility for collection would require updates to franchise / license agreements, particularly in cases where the local government opts out of providing recycling collection services. In those cases, the franchise agreements would cover only solid waste and organics collection.

One of the more significant transitional consideration in Scenario 5 would be the transfer of responsibility for processing agreements from collection service providers to producers. The transition would significantly change the operating context of MRFs in the state, which have traditionally operated on the spot market, and through agreements with individual collection service providers. In these scenarios, MRFs would enter into longer-term contracts with the PRO(s). The transition would also impact relationships between collection service providers and MRFs, particularly if the PRO(s) designates that material flow be directed from communities to specific MRF contractors, to ensure appropriate distribution of materials and allow for matching flows to capacity.

In order to achieve the potential benefits of these scenarios, DEQ would need to maximize its use of current authority, and new statutory authority would be required.

How Does Scenario 5 Relate to the RSC Desired Functions?

1. **Optimization: Optimizes the benefits of recycling considering life-cycle impacts and costs**

Scenario 5 addresses this function by granting DEQ authority to designate end-of-life pathways for materials based on LCA data, and by engaging producers to share responsibility in the recycling system. It would also incentivize the reduction of upstream impacts of the materials in the waste stream through the use of eco-modulated fees. Added financing and the provision of guaranteed end-markets would allow for a higher overall level of recovery, further optimizing benefits.

2. **Resiliency: Resiliently adapts to changes in material supply and end-market demand**

Scenario 5 significantly improves resiliency, as it ensures that producers absorb the risk related to changes in end-market demand, thus stabilizing the collection and processing system. The scenario could be further designed for resiliency, if this function is considered when developing the process for adding / removing materials from the core list of recyclable materials, and when developing new implementing regulations related to MRF operations.

3. **Financing: Provides sustainable and equitable financing for stable operations and capital investments**

Scenario 5 meets this function by providing a stable, consistent and enforceable financing mechanism. Producer financing covers collection, transportation, processing and marketing.

4. **Integration: Integrates system components to achieve overall system goals**

Scenario 5 meets this function by better integrating MRFs into the system, by engaging producers, and by creating additional focus on end-market development to integrate end-markets into the system. In Scenario 5, the PRO(s) more actively focuses on system integration, as they take on full financial responsibilities.

5. **Upstream: Includes mechanisms to reduce upstream impacts of materials**

Scenario 5 incorporates eco-modulated fees, which would serve as a tool to incentivize reduced upstream impacts of materials. Producers would fund waste reduction/prevention efforts, and obligations to reduce upstream impacts directly would further align with this function.

6. **Equity: Designs for equity – examining the burdens and benefits across the state**

Like the publicly managed scenarios, Scenario 5 addresses this function by requiring DEQ to establish equity standards, and integrate those standards into permitting and decision-making activities, including approval of PRO(s) program plans. It also ensures that recycling service is provided across the state through parallel service requirements.

7. **Shared Responsibility: Shares responsibility for the system among players including residents and businesses, producers, state and local governments, and recycling industry**

Scenario 5 shares responsibility among the players in the stream, though the extent of responsibilities held by different parties differs. In Scenario 5, residents and businesses must separate recyclables for collection, and collection service providers must provide recycling services. Producers have both financial and operational responsibilities for collection and post-collection, though local governments may opt to participate in the collection activities – through agreements with the PRO(s).

8. **Goals: Uses goals and metrics to measure progress and support ongoing improvement**

Scenario 5 would meet this function by establishing performance goals for producers and by creating a planning and reporting process to track progress against those goals.

9. **Education: Educates and encourages residents and businesses to use the system properly**

Scenario 5 would meet this function by clearly requiring either local governments or the producers (depending on the scenario) to engage in education programs.

10. **Understanding Impacts: Engages the public to understand the benefits and the costs of recycling, preventing waste and reducing impacts of materials throughout their life-cycles**

Scenario 5 includes mandatory variable rate pricing, which might serve as a tool to help residents and businesses understand waste management costs. They do not otherwise engage the public to understand the life-cycle impacts of materials. Recycling costs might become more or less visible to the public: they would be included in annual performance reports by the PRO, but no longer included in collection bills.

11. **Material Selection: Identifies beneficial materials acceptable for collection programs**

Scenario 5 addresses this function by establishing a process for developing a core list of recyclables. The PRO(s) would propose a core list in its program plan and DEQ would review and approve the list using the LCA database as a key data source in its evaluation.

12. **Collection: Collects clean, acceptable materials for processing**

Scenario 5 is designed to retain one of the core strengths of the current framework – efficient collection of recyclable materials. It would require that producers provide a similarly efficient system. Scenario 5 also requires that the entity responsible for collection implement best practices to reduce contamination, which would improve the quality of the material collected.

How Does Scenario 5 Relate to the RSC Desired Functions? Continued

13. Incoming Processing: Ensures processing facilities receive clean materials and in sufficient volumes

By mandating a core list of recyclables, and banning them from disposal, and centralizing control of the processing infrastructure Scenario 5 improves the likelihood that facilities receive sufficient quantities of materials for recycling. Requirements on local governments or producers to implement best practices to reduce contamination would improve the quality of incoming materials.

14. Outgoing Processing: Produces quality materials that reach end-markets

In Scenario 5, producers would require MRFs to meet processing standards to reduce contamination and improve outgoing material quality. The scenario's elements that improve incoming material quality (as noted above) will also improve outgoing material quality as well, as the inclusion of a MRF certification or permitting program in these scenarios could improve outgoing material quality through the operating standards imposed.

15. Downstream: Ensures materials are managed responsibly from collection through end-markets

In Scenario 5, oversight by DEQ and agreements between the PRO(s) and MRFs would address this function by setting criteria for acceptable downstream markets. In addition, the reporting required in this scenario would improve transparency, which may foster more responsible management.

16. Accountability: Ensures all players in the system perform responsibly

Scenario 5 would require enhanced reporting that would provide transparency, and new authority granted to DEQ would allow the agency to enhance accountability of key players in the system through enforcement, if necessary.