



MOVING THE NEEDLE – AN INDUSTRY APPROACH TO INCREASE FUNDING FOR RECYCLING

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1. Executive Summary

This white paper has been prepared by RSE USA under the Carton Council’s Recycling Funding Options Project. The goal of this paper is to identify approaches to increase funding for recycling that can be supported by industry and other key stakeholders, and that can effectively “move the needle” to increase recycling levels. To prepare the paper, RSE USA reviewed literature, drew upon its team experience and interviewed key CPG industry stakeholders. Everything in this paper is intended for discussion purposes. As a starting point, the Project Team identified possible strategies and next steps to help stakeholders engage, suggest modifications, and make decisions.

As detailed in Section 3, the findings in the Recycling Funding Options Project white paper are founded on three key premises:

- Existing recycling systems are beneficial but need improvement.
- Funding gaps are constraining further recycling growth and success.
- Expanded public-private partnerships could help address these funding gaps.

Is there an approach that consumer packaged goods (CPG) companies and other stakeholders can support? This paper provides a framework for addressing this important question. The framework includes the following elements.

Optional Funding Mechanisms

Twenty-six (26) existing and potential funding mechanisms are identified in Table 1, grouped into four categories:

- Funding from the Local Waste Management System or Taxpayers, including:
 - Fees and Revenues Paid to Service Providers
 - Other Local Government Funding Mechanisms
- State and Federal Funding from the Waste Management System or Taxpayers
- Funding from Investors and Lenders
- Funding from the Product/Packaging Supply Chain, including:
 - Government-Initiated Funding Mechanisms
 - Voluntary Industry Initiatives

Although there are many potential variants, this breakdown can help stakeholders to identify and compare the range of funding options available.

Core Principles and Ideal Characteristics

Section 4 describes key themes from stakeholder interviews. As presented in Table 2, most stakeholders agreed that, in an ideal world, recycling funding mechanisms would be:



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- Reliable,
- Efficient and effective, and
- Equitable and fair.

Table 2 also identifies 12 ideal characteristics that further define these three core principles, which aim to capture perspectives shared by a wide range of recycling stakeholders, including many advocacy groups, government agencies and private companies. Finally, Table 2 also identifies several specific perspectives voiced by CPG industry stakeholders. These industry-specific perspectives provide a starting point for discussion regarding which funding mechanisms may be acceptable to industry stakeholders.

The Business Case for Industry Investment in Packaging Recycling

Section 5 presents a business case for industry investment in packaging recycling, organized around three key points:

- Recycling helps address company sustainability and raw material needs, for example, by providing recycled material feedstock supplies, reducing greenhouse gas emissions and supporting local communities.
- The types of investments needed to strengthen and grow recycling are well known and widely understood. These include, for example, gaps in funding for strengthening local programs, educating the public about recycling opportunities and optimizing systems through market development and research.
- Specific investment terms can be designed to help fill funding gaps in a way that addresses key industry concerns, for example, by tying time-limited industry investments to specific, achievable goals, ensuring equitability in funding obligations and benefits, and ensuring that industry controls use of funds.

Portfolio Approach to Funding

Section 6 presents a preliminary assessment of recycling funding needs, describes current funding gaps, and identifies which types of funding sources may be best suited to different recycling needs. Most CPG industry stakeholders interviewed agreed that funding from local waste management systems or taxpayers is well matched to covering ongoing costs associated with recycling collection programs, while funding from industry is better matched to time-specific, goal-driven investments in education and outreach, market development, research and system optimization. Further consideration of this stakeholder feedback led to the development of a four-pronged, partnership based “portfolio” approach for funding outlined in Section 5 for consideration.

Proposed Industry Role for Further Consideration

After considering stakeholder feedback on recycling funding needs and options, four broad strategies for an industry initiative aimed at strengthening recycling funding were identified. All of these strategies emphasize a portfolio-based, public-private partnership approach. In short, the role of industry could be to:

- Promote stronger local funding systems, for example, by increasing funding to refine and expand technical assistance activities of The Recycling Partnership;

- Partner with state or federal programs on select projects, for example, to promote expansion of domestic manufacturing based on recycled feedstocks;
- Address financing barriers and make targeted, strategic investments to leverage current financing sources, for example, by expanding funding for the Closed Loop Fund; and/or
- Identify and Implement a new funding mechanism. As a starting point for discussions, in this white paper we have identified two alternative funding mechanisms that could derive additional revenue from the product/packaging supply chain, and that may hold the potential to be designed in a way that addresses many of the identified industry concerns:
 - 1) Mandated supply chain funding mechanisms. Although many industry stakeholders are opposed to any type of mandate, some industry stakeholders view retail fees (#18) as a potential approach, especially in lieu of other mandated options that may be in place or under consideration in some states.
 - 2) Statutorily authorized cooperative initiatives (e.g., Checkoff programs, #20). Although not yet applied to the recycling arena, these initiatives provide an intriguing model that many stakeholders interviewed for this project found worthy of additional consideration. “Checkoff” programs are a type of such initiative that have been implemented for 22 agricultural industries (e.g., paper, milk, beef, almonds) to provide a framework to pool their resources and combine efforts to develop new markets, strengthen existing markets and conduct important research and promotion activities. (See Appendix A for additional information.)

Next Steps

Recycling matters to consumers, and it stands as a central component of the circular economy and the overall economy. To make recycling work, additional funding is needed. It is the Carton Council’s hope that the results of this research will be helpful in informing discussions of funding mechanisms for advancing recycling in the United States.

2. Background

This white paper has been prepared by RSE USA under the Carton Council’s Recycling Funding Options project. The goal of the project is to identify approaches to increase funding for recycling that can be supported by industry¹ and other key stakeholders, and that can effectively “move the needle” in terms of increasing recycling levels. The project is currently focused on the recycling of post-consumer packaging, not on other discarded materials and products. Also not addressed are other management options such as waste reduction, reuse or composting, or broad sustainable materials management or circular economy goals.

Presented herein is a framework for developing a public-private funding strategy that can be supported by industry, by identifying:

- Key premises upon which the effort is grounded (Section 3)
- Key industry perspectives to be addressed (Section 4);

¹ Unless otherwise stated, in this paper “industry” or “CPG industry” refers to the entire consumer packaged goods supply chain, including brand owners, packaging manufacturers, product manufacturers, distributors and retailers.

- The business case for industry investment in packaging recycling (Section 5);
- A proposed portfolio-based approach to identifying appropriate funding roles for industry and other stakeholder groups (Section 6);
- Possible roles for industry-derived funding within a portfolio-based, public-private strategy to address key funding gaps (Section 7); and
- A proposed path forward to advance a funding initiative (Section 7).

The Project Team has identified *possible* strategies and next steps to help stakeholders engage, suggest modifications, and make decisions. Everything in this paper is intended for discussion purposes.

3. Key Premises

In brief, based on review of literature, current recycling trends and stakeholder interviews the following key foundational premises are proposed as a starting point for further discussions:

Existing Recycling Systems Are Beneficial But Need Improvement

Materials recycling offers many benefits. Recycling has economic, environmental and societal benefits, and supports a variety of business-related goals important to industry. For example:

- Recycling uses local resources that are otherwise be wasted, providing jobs and tax revenue;
- Recycling creates significantly more jobs than waste disposal activities, with an estimated 149,000 direct employees and a total economic impact of \$105.8 billion annually in the U.S.;²
- Manufacturing with recovered materials rather than virgin resources typically reduces energy consumption and greenhouse gas emissions;
- Many manufacturers and brand owners have made investments that require use of recycled feedstocks, so recycling is needed to avoid supply disruptions which can put a brand at risk;
- Recycling is a cornerstone of the emerging Circular Economy and Sustainable Materials Management frameworks and corporate goals that are increasingly being adopted by consumer product and packaging companies and government agencies alike; and
- These benefits can directly support or even be a foundation of corporate sustainability plans.

The current recycling system is strained. Many communities have poor or no access to recycling collection services. Many programs have not adopted preferred practices proven to increase efficiency and effectiveness. In addition, the continuing evolution of packaging and products and the resultant waste stream increases costs and challenges. Further challenging U.S. recycling systems is China’s passage of national policy prohibiting the import of U.S. generated recyclable materials that fall short of China’s stringent new quality specifications. As a result, there has

² John Dunham & Associates for ISRI, “Economic Impact Study: U.S.-Based Scrap Recycling Industry, 2015.”

been a major decline in the demand for and value of certain recyclable materials. Recycling rates for packaging and selected other materials are stagnant at lower-than-desired levels and even declining in certain communities.

Funding Gaps Are Constraining Further Recycling Growth and Success

While there were gaps in funding levels previously, China’s policies combined with the shift toward lighter, more-costly-to-recycle materials, have exacerbated this problem. One-time investments are needed for collection carts, and processing equipment upgrades to help programs not only improve materials capture but ensure that materials collected and processed are of sufficiently high quality to be successfully marketed. Ongoing funding is also needed for stronger public education and promotion programs, ideally at a regional or state level to reduce confusion over what to recycle and how. Funding is also needed for market development, research and system optimization to ensure recycling succeeds over the long term. Even the highest performing local programs that have adopted strong, sustainable funding mechanisms to cover their operations are usually not able to cover these gaps. Most of these gaps involve all recyclable packaging equally. But some market development and research activities in particular may need to focus on specific packaging formats and may, therefore, be better addressed by individual companies or market segments.

Stronger, more robust recycling systems would maximize benefits. Ideally, recycling services would be available wherever products and packaging are consumed, and programs would be optimized to maximize efficiency. Consumers would be provided with easy-to-understand, consistent information on what is recyclable and how to recycle it, and with incentives to encourage their full participation. Collection and processing systems would produce high-quality recycled materials at the lowest cost possible. In addition, materials would flow to high-value markets that maximize the potential environmental and economic benefits.

Expanded Public-Private Partnerships Could Help Address Funding Gaps

Twenty-six distinct funding mechanisms have been identified that currently, or potentially could, support recycling with funding derived from four broadly defined sources: local waste management systems; state or federal administered programs; private lenders and investors; and the consumer product/packaging supply chain. These funding mechanisms are listed in Table 1 below, and defined in more detail in Appendix A.

New industry investments could complement and leverage existing public and private funding sources to address key gaps. Some local governments have shown it is possible to ensure ongoing funding for recycling collection and processing operations, although many struggle to do so. Conversely, local governments in general are not well positioned to fund certain gaps in current systems such as strong, sustained public education across municipalities served by the same processing facility or across states, or research on new/enhanced recycling systems. On the other hand, industry may be well positioned in these areas because of its experience communicating with consumers, flexibility in approach and ability to target investments to achieve the largest outcomes, even if across different cities and states. Some states, and to a lesser extent federal agencies, have provided a degree of support for local recycling programs, statewide public education, research, and market development. If concerns are adequately addressed, new industry funding could be strategically invested to leverage and complement existing funding, focusing on areas best matched to industry’s positioning.



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Ideally, funding systems would be: 1) reliable; 2) efficient and effective; and 3) equitable/fair. In an ideal world, recycling funding systems (employing a number of different mechanisms) would satisfy these core principles and have several other desired characteristics, as described in more detail in the next section. These ideal principles and characteristics provide a framework for evaluating options but are unlikely to be fully realized by any single funding mechanism or funding system.



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Table 1: Existing and Potential Funding Mechanisms for the Recycling of Post-Consumer Packaging

Funding from the Local Waste Management System or Taxpayers		State and Federal-Government Funding from the Waste Management System or Taxpayers	Funding from Investors and Lenders	Funding from Product/Packaging Supply Chain	
Fees and Revenues Paid to Service Providers	Other Local Government Funding Mechanisms			Government-Initiated Funding Mechanisms	Voluntary CPG Industry Initiatives
<p>1. User fees paid by service recipient to service providers, whether public or private</p> <p>2. Sale of recyclable commodities</p>	<p>3. Funding from local property taxes (e.g., allocation or line-item assessment) to fund private contracts or public services</p> <p>4. Per-ton disposal surcharge</p> <p>5. Municipal license/permit/franchise fee on haulers</p> <p>6. Tax on hauling services</p> <p>7. Flat fee per waste generator account</p> <p>8. Facility fees (e.g., permit fees)</p> <p>9. Bonds (issued by local government)</p>	<p>10. State-level disposal surcharge</p> <p>11. State general fund allocation</p> <p>12. State tax on hauling services</p> <p>13. State/federal grant and loan programs</p> <p>14. Bonds (backed by state or federal government)</p> <p>15. Allocation of proceeds from other industry tax/fee programs (e.g., GHG or oil/gas surcharges)</p>	<p>16. Stock sales – publicly held companies raise funds by offering stock</p> <p>17. Private investment/ loans—publicly and privately held companies raise funds through loans or equity financing (e.g., venture capital or private investors)</p>	<p>18. Retail product/packaging fee (e.g., non-refundable recycling fee)</p> <p>19. Gross receipts tax (e.g., litter tax based on % of sales)</p> <p>20. Statutorily authorized cooperative initiatives (e.g., Checkoff programs)</p> <p>21. Extended Producer Responsibility (EPR) – shared cost model^{3,4}</p> <p>22. EPR – full industry responsibility model^{3,4}</p> <p>23. Funds from deposit-return systems</p>	<p>24. Single-sector recycling support – (e.g., Ag Container Recycling Council program, Carton Council, specific brands)</p> <p>25. Multi-sector recycling support (e.g., Recycling Partnership, Closed Loop Fund)</p> <p>26. Financial incentives for adopting low environmental impact behaviors (e.g., carbon efficiency)</p>

4. Key Themes from Stakeholder Interviews

Fourteen CPG industry stakeholders were asked to share their thoughts on whether and how new industry investments in recycling might be possible. These stakeholders were selected based on their:

- Knowledge, experience and positioning in CPG industry recycling efforts;
- Demonstrated, proactive interest in exploring and advancing expanded packaging recycling;
- Established relationships with Carton Council team members; and

- Their diversity of positions within the CPG supply chain, including brand owners, packaging manufacturers and different packaging formats.

Among this group there was broad (though not always unanimous) agreement on several key themes, including:

Local funding mechanisms should continue to cover ongoing operational costs for collection and processing, and some local governments have shown this can be done successfully. Industry funding should not be used for ongoing recycling operations.

Industry investments could be used to address gaps that are difficult to cover with existing funding systems. For example:

- Targeted one-time investments to expand and improve collection and processing systems or for research, market development and systems optimization projects that broadly benefit all packaging recycling; and
- Certain ongoing costs, such as those related to expanded and strengthened public education campaigns but for a fixed period of time.

Few, if any, stakeholders advocated strongly for any one funding approach; however, areas of broad agreement include:

- Industry investments, including level of funding and specific uses of funds, must be controlled by the companies that invest in them.
- Any new funding mechanisms and programs should leverage, complement and strengthen existing ones, not duplicate or compete with them.
- Programs must be equitable. No company or industry/market segment should benefit over others. This means costs must be allocated, and free-rider concerns addressed.
- Programs should be comprehensive. New approaches should cover all packaging formats (or possibly a subset that is defined in a way that addresses equity concerns).
- Funding sources must be well matched to needs (e.g., funding for ongoing operations vs. one-time capital investments).
- Industry investments should be tied explicitly to clear, time-specific goals that are achievable through a clearly articulated approach and identified expenditures.
- New funding approaches must contribute the proper amount of funding needed for specific steps to achieve desired outcomes.
- Ideally, new funding would be structured to incentivize positive choices/behaviors by consumers and companies across the recycling and product supply chains.
- The USDA Checkoff program has some intriguing elements that should be considered for inclusion in new industry-supported approaches, such as its unique combination of required and voluntary elements, and the use of triggers. For example: Funding requirements do not kick in until companies representing a minimum threshold of market share in covered segments commit; funding is controlled by an industry board; and the board can choose to discontinue the program at any time. Appendix A provides additional details on this program.

A stakeholder engagement process is needed to refine the funding approach and craft an implementation strategy.

- Stakeholders voiced strong support for this project, while acknowledging that securing support for new industry funding is very challenging.
- A strong business case/value proposition showing cost/benefit is needed.
- Any new initiative to develop or implement a funding strategy should leverage and complement existing initiatives and avoid duplication as much as possible.
- It is essential to define attainable objectives and a clear process to achieve them.
- It is important to identify the potential implications of any proposed approach and be prepared to address objections.
- Ultimately, the diverse perspectives of all stakeholders are important and must be considered. Additional stakeholders include:
 - Individuals (whether acting as waste generators, tax payers or consumers);
 - Local, state and federal governments;
 - Private companies involved in waste management and recycling;
 - Private companies and individuals involved in the financial industry;
 - Commercial waste generators and rate payers; and
 - Elected officials.

Stakeholders supported the approach of defining core principles and characteristics that describe an ideal recycling funding system. Most agreed this framework may help to identify areas of agreement and disagreement, and to effectively frame the evaluation and discussion of options. Table 2 below presents core principles and characteristics developed based on stakeholder feedback and identifies perspectives on what may be required to secure support from product/packaging supply chain stakeholders. If industry stakeholders choose to advance a funding initiative in a later phase of this project, it will likely be necessary to identify and address perspectives of other stakeholder types.

Table 2: Core Principles and Ideal Funding System Characteristics with Key Industry Stakeholder Perspectives

Core Principle	Ideal Characteristics*	Key Product/Packaging Stakeholder Perspectives**
Reliable	<p>A. Consistently generates predictable and stable amount of revenue as intended, over the time period intended (whether short- or long-term)</p> <p>B. Low risk of fund diversion, reduction or discontinuation (except where planned from start)</p> <p>C. Low risk of legal or legislative challenges</p> <p>D. Can withstand marketplace volatility</p> <p>E. Will not diminish with increasing recovery success (except where planned from start)</p>	<p>The amount of industry funding should be tied to specific purposes and uses to meet specific needs and time-certain goals.</p>
Efficient and Effective	<p>F. Should result in increased recycling rates</p> <p>G. Funding levels tied to specific needs and uses in order to achieve clear, time-specific goals</p> <p>H. Reasonable administrative costs and requirements</p> <p>I. Incentivizes positive choices/behaviors</p>	<p>Industry investments should:</p> <ul style="list-style-type: none"> • Be exclusively targeted to intended uses to maximize return on investment (i.e., efficiently and effectively achieve goals) • Complement existing funding mechanisms and industry initiatives to expand recycling, while not competing or restricting funding for related efforts (e.g., CLF, TRP) • Focus on recycling goals at this time, not broader or ancillary goals such as SMM
Equitable and Fair	<p>J. No free riders (except by design): little or no risk of non-payment by those designated to cover costs</p> <p>K. Transparency and accountability exist regarding sources and uses of funds</p> <p>L. Addresses key concerns related to equity and fairness as viewed by: packaging/product industry; recycling/ waste industry; small businesses; low-income, consumer and tax payer advocates; and other stakeholder groups</p> <p>M. Funding roles and responsibilities are shared in an acceptable, equitable way with reasonable cost controls</p>	<p>Acceptable industry funding roles may include:</p> <ul style="list-style-type: none"> • Targeted, one-time investments to help select community programs start up, expand or improve • Targeted, one-time investments in research, market development and system optimization models/pilots • Funding for public education and recycling promotion initiatives <p>No company or industry/market segment should benefit or have costs over others.</p> <p>Use of industry funds must be controlled by investing companies.</p>

* This table is intended to capture the most important ideal characteristics of recycling funding mechanisms, in an objective and unbiased manner. The authors acknowledge it is possible to word and/or group these characteristics in different ways.

**CPG industry stakeholders interviewed generally support the universal characteristics listed in the second column. The perspectives listed in column three are additional or more specific characteristics important to them.

5. The Business Case for Industry Investment in Packaging Recycling

A variety of industrywide and company-specific initiatives have sought to strengthen recycling through investments in research, technical assistance, pilot projects, and in some cases direct funding. However, the following synopsis of the findings and stakeholder perspectives presented above suggest there is a strong case for increased industry funding to help advance recycling:

1. Recycling helps address company goals and raw material needs.

- The environmental and economic benefits of recycling help meet corporate sustainability goals related to community investments, waste, recycling, greenhouse gas reductions, circular economy, and sustainable materials management.
- Recycling provides the raw materials needed by manufacturers whose investments require a steady stream of high-quality recycled material feedstocks.
- Proactive industry investments in recycling may reduce the potential for legislated policies to be adopted.

2. The types of investments needed to strengthen and grow recycling are well known and widely accepted.

- Stronger local systems are needed to optimize programs and fund ongoing operations while attracting needed capital investments.
- Strong education programs are needed to boost materials recovery and reduce contamination.
- Models for systems optimization are needed, including funding for research, market development and professional development.

3. Specific investment approaches can be designed to address many industry concerns.

- Tie industry funding to specific needs and goals.
- Match amount and type of funding to specific needs.
- Companies investing in recycling manage use of funds either directly or via industry representation.
- Equitability – no one company or market segment should benefit over others.
- No free riders – implementation mechanisms ensure that competing firms all participate equally (although small producers could be exempt by design).
- Investments are not ongoing and have a specified end-date.
- Industry investments complement and leverage existing funding and recycling support programs, while not duplicating or competing with them.
- Industry funding is used to fill gaps that are least able to be filled by existing systems, and where industry is well positioned for success.

Consumers' Sustainability Expectations:

- 61% of U.S. adults “definitely” expect food and beverage brand owners to actively help increase recycling of packages used for their products, an increase from 50% in 2013.
- When respondents who answered “probably” are included the rate is 92%. This is an increase from 86% in 2013.
- 46% of consumers say they very consistently or often consider the environment when making purchasing decisions. Only 23% said they rarely or never do.

2017 Study by Research + Data Insights for the Carton Council

- New initiatives build directly on previous industry investments by complementing, leveraging and strengthening them (e.g., The Recycling Partnership and the Closed Loop Fund).

6. A Portfolio Approach to Funding

Which of the 26 recycling funding mechanisms identified in Table 1 is “best?” In theory, each mechanism could be evaluated in detail against the 12 key characteristics identified in Table 2, while considering the potential for each mechanism to satisfy the funding roles for each source, as identified in Table 3.

In reality, a comprehensive, detailed evaluation of all 26 funding mechanisms is not practical because:

- The large number of optional funding mechanisms, each of which can be implemented in different ways that may influence how each rates against certain characteristics;
- The complexity of the desired characteristics listed in Table 2, which stakeholders may define and weigh differently (some of which, such as K and L in Table 2, are subjective in nature);
- The fact that individual mechanisms are almost always used in combination with others, in myriad different ways across the country;
- A lack of readily available data on past performance of funding mechanisms; and
- The time and budget constraints of this project.

Notwithstanding these challenges, Appendix B graphically summarizes a high-level assessment of how each funding mechanism rates against the 12 ideal characteristics. This is intended as a tool to help stakeholders discuss the pros and cons of different funding mechanisms.

In practice, no one funding mechanism can meet all needs, and current recycling funding systems are comprised of a portfolio of different funding mechanisms. Funding of recycling is currently shared among many recycling stakeholders as indicated in Table 1, including:

- Individuals (whether acting as waste generators, tax payers or consumers);
- Local, state and federal governments;
- Private companies involved in waste management and recycling;
- Private companies and individuals involved in the financial industry; and
- Private companies involved in the product and packaging supply chain.

Most stakeholders suggested further defining appropriate funding roles for these sources because different funding mechanisms tend to be suited to meeting different needs. For discussion purposes, Table 3 below summarizes stakeholder suggestions on the potential roles that each of the four funding sources listed in Table 1 could potentially play in addressing funding gaps.

In brief, **local funding sources** (whether from taxpayers or the waste management system) are best matched to ongoing collection and processing operations. These ongoing revenue streams may also be used to secure financing for one-time capital investments in facilities and for

other needs, and local governments can structure service contracts and requirements in ways that encourage or even require such private sector investments. Local sources, on the other hand, are not well suited to broad needs such as research, market development or system optimization models – especially when such needs extend beyond local jurisdictional boundaries and responsibility/expertise. And while local governments have had primary responsibility for informing service recipients about how to recycle, they usually are not well positioned to conduct effective recycling promotion and outreach campaigns across MRF-sheds or broader geographic regions.

State and federal sources are generally well suited for supplementing local funding and can also play a role in research, market development, system optimization and cross-community promotion and education activities.

It is appropriate that **private lenders and investors** provide funding for one-time capital and/or start up investments, where private or public sector entities qualify for such financing. These investments are typically backed by revenue streams from other funding sources listed in Table 1.

Finally, most stakeholders interviewed agreed that **funding from industry-related sources** (whether derived from government policies such as retail fees or from voluntary initiatives) is best suited to meeting needs that complement and strengthen local programs, namely cross-community promotion and education campaigns, and research, market development and system optimization projects that broadly benefit all packaging types. These are all well matched to industry's role in designing and manufacturing packaging, its expertise in marketing, and the growing commitment to broad sustainability goals and, more specifically, recycling goals.

Table 3 also identifies gaps and indicates that these funding roles are very rarely fully satisfied in practice. While some local funding systems are robust, many struggle to secure even the barest minimum funding required to maintain collection and processing activities, let alone strong public education or system optimization efforts. Some states have long-standing funding programs that provide a relatively small level of funding (compared to the need), but many states have virtually no such programs at all. Private financing can be ample, but sometimes ventures needed for market development or other recycling needs are unable to secure financing because of real or perceived risks unique to the recycling industry (for example, related to market volatility, reliance on government policies that may change, evolving waste streams that may threaten established business models or emerging, unproven technologies). Most stakeholders agreed that, while there are several examples of industry funding programs, the amount and scope of these programs is a drop in the bucket compared to the need.

Most industry stakeholders strongly suggested that industry should not be responsible for ongoing operational costs related to recycling collection and processing. The intention is to define industry's role consistent with what it does best and is best positioned to do, in a way that complements and strengthens existing funding mechanisms and initiatives. While limited compared to extended producer responsibility or certain other policy alternatives, this assumed industry funding role does imply that additional funding from industry sources is needed.

Table 3: Potential Roles for Funding Sources in Addressing Gaps

Type of Funding Needed to Support Recycling	For Discussion – Preliminary Assessment of Funding Needs, Potential Roles, Gaps, and Funding Sources			
	Funding from Local Waste Management System or Taxpayers	State and Federal-Government Funding from the Waste Management System or Taxpayers	Funding from Investors and Lenders	Funding from the Product/Packaging Supply Chain
<p>1) Ongoing funding to cover essential recycling collection and processing operation and maintenance costs necessary to sustain day-to-day operations and to expand as necessary (e.g., to keep up with population growth).</p>	<p><u>Role:</u> Primary funding source. <u>Adequacy:</u> Variable. Some local governments have strong funding systems and supporting policies (e.g., mandates and PAYT) and programs that satisfy most needs and core principles. <u>Gaps:</u> Widespread and significant gaps and many weak systems. Needs exist in rural areas, multi-family housing, and public spaces.</p>	<p><u>Role:</u> Supplement local funding sources, not necessarily replace them. Exceptions are states (e.g., Rhode Island and Delaware) with statewide authorities that play a role closer to that of a local government. <u>Adequacy:</u> Variable and limited, even within narrow role. Some states fund a portion of certain ongoing recycling operational costs. Funds may vary from year to year. <u>Gaps:</u> State and federal funding could play a stronger role in funding ongoing costs but are not assumed to be the primary source.</p>	<p><u>Role:</u> Limited. Loan and investment proceeds may sometimes be used to strengthen cash flow needs but are not a primary revenue source for ongoing operations. <u>Adequacy:</u> Good considering the limited role. Market-driven. <u>Gaps:</u> None for this funding role.</p>	<p><u>Role:</u> Very limited. Possibly funding for unique needs such as public space recycling or one-time industry funding to incentivize adoption of preferred practices in local operations. <u>Adequacy:</u> Limited funding but consistent with assumed role. Examples: a) Handling fees/other deposit system elements; b) Limited use of retail fee funds; and c) A few voluntary initiatives cover a share of operational costs (e.g., agricultural containers). <u>Gaps:</u> None, given assumed role.</p>
<p>2) One-time funding for capital infrastructure and supplies (e.g., carts), needed for program/facility start up, to boost capacity or improve system performance, and/or to drive regional initiatives such as MRF/hub-and-spoke strategies.</p>	<p><u>Role:</u> Primary source of revenue needed to secure investments from investors and lenders. <u>Adequacy:</u> Variable. Strong local systems successfully incentivize and facilitate private investment in facilities through contracting, policies and rate setting. Others lack tonnage or revenue assurances needed to secure investments. <u>Gaps:</u> Need for one-time investments to strengthen local systems to foster investments needed to achieve recycling goals.</p>	<p><u>Role:</u> Complement local funding sources, not necessarily replace them. <u>Adequacy:</u> Variable but typically very limited. Select grants, loans, bonds and other financing programs provide tangible capital funding to select projects. <u>Gaps:</u> These funding sources do not come close to meeting the need for local one-time investments to address all types of needs or in all geographic areas.</p>	<p><u>Role:</u> Primary funding source for qualified firms and projects. <u>Adequacy:</u> Good for qualified firms and projects. <u>Gaps:</u> Unable to meet needs where firms not qualified and where local governments have not established favorable conditions/incentives. Unique recycling industry risks. sometimes preclude access to financing.</p>	<p><u>Role:</u> Complement other sources to make strategic, targeted, one-time investments to increase capacity or optimize operations/ infrastructure, with amount and type of investments tied to achieving specific goals. <u>Adequacy:</u> Limited funding but some good models and examples of one-time support to help programs grow (e.g., TRP, CLF, Carton Council, etc.). <u>Gaps:</u> Reach of current industry-sponsored programs could be expanded to cover more communities and needs across the country. No overarching goals or framework to drive investment levels.</p>

Type of Funding Needed to Support Recycling	For Discussion – Preliminary Assessment of Funding Needs, Potential Roles, Gaps, and Funding Sources			
	Funding from Local Waste Management System or Taxpayers	State and Federal-Government Funding from the Waste Management System or Taxpayers	Funding from Investors and Lenders	Funding from the Product/Packaging Supply Chain
3) Funding to promote participation and proper recycling behavior (i.e., promotion, education and enforcement activities).	<p><u>Role:</u> Primary responsibility for basic, community-specific education and enforcement. Partners in MRF-shed or regional education campaigns.</p> <p><u>Adequacy:</u> Poor. Some strong examples, but most local programs cover only minimal, essential public education. Local governments not positioned for regional approaches or sustained campaigns.</p> <p><u>Gaps:</u> Additional funding needed for long-term state-of-the-art approaches.</p>	<p><u>Role:</u> Complement local and industry programs and partner with them where appropriate.</p> <p><u>Adequacy:</u> Poor. A few examples of state programs funding or spearheading statewide public education programs or assistance to local governments to provide adaptable outreach/enforcement materials and guidance.</p> <p><u>Gaps:</u> Widespread. Only a few states have programs and none are sufficiently funded. No large-scale federal programs fund recycling public education.</p>	<p><u>Role:</u> Very limited. In some cases, a portion of loan/investment proceeds for qualified ventures may be used for public education.</p> <p><u>Adequacy:</u> Sufficient, given limited role.</p> <p><u>Gaps:</u> None, given limited role.</p>	<p><u>Role:</u> A potential primary new role for industry. Could expand tools, resources and technical assistance to drive effective targeted education campaigns. Could cover a portion of ongoing campaign costs.</p> <p><u>Adequacy:</u> Limited but helpful. Some programs provide targeted tools, resources and technical assistance, with some state or national recycling promotion campaigns.</p> <p><u>Gaps:</u> Need is far greater than available resources can cover. Ongoing public education, especially for MRF-shed or regional approaches, is rarely available.</p>
4) Funding for activities that support long-term recycling success , including: market development, research projects; optimization activities; and in-depth planning and professional development.	<p><u>Role:</u> Limited, but potential partners and implementers of preferred practices (under roles above) as appropriate.</p> <p><u>Adequacy:</u> Very limited. Local governments usually not equipped or positioned to fund or conduct these activities.</p> <p><u>Gaps:</u> Few, given limited assumed role, but many local governments would need funding even to serve a limited partner role.</p>	<p><u>Role:</u> Complement local and industry programs and partner with them where appropriate.</p> <p><u>Adequacy:</u> Poor. Some states have market development programs with many successful projects, but funding and scope is limited. A few states have supported limited research, training and systems optimization efforts.</p> <p><u>Gaps:</u> Overall funding and programs are very limited compared to need.</p>	<p><u>Role:</u> Primary for funding specific private market expansion projects and some research activities. Otherwise none.</p> <p><u>Adequacy:</u> Sufficient, given limited role and where firms/projects qualify.</p> <p><u>Gaps:</u> Some firms/projects do not qualify due to unique recycling industry risks.</p>	<p><u>Role:</u> Potentially a primary role in partnering and funding select projects, where efforts broadly benefit all packaging formats equally.</p> <p><u>Adequacy:</u> Currently very limited. Some industry examples (e.g., CLF, Carton Council, The Recycling Partnership).</p> <p><u>Gaps:</u> Additional funding and frameworks needed to drive developing models, identifying and addressing specific needs, providing training for recycling professionals on best practice approaches, and to promote long-term recycling.</p>

7. Proposed Industry Roles for Further Consideration

Are there strategies that industry can implement that would strengthen existing funding systems and yield new industry investments to complement and leverage current funding? In the context of this project, this is the key question.

Provided below for consideration is a four-pronged, strategic approach that could potentially be advanced as an industry initiative to address the key funding gaps constraining recycling, based on the core principles and public/private, portfolio approach to funding outlined earlier in this white paper.

Promote Stronger Local Funding Systems

Communities across the U.S. have demonstrated a number of diverse models for strong, sustainable local recycling funding systems that satisfy their roles as identified in Table 3. While not identified as a primary funding role for industry, promoting strong local funding systems could fit well within an industry initiative because it can both address the critical need for stronger ongoing funding of operations, while shifting the focus of industry funding to other niche roles best suited to them. Promoting best practices is also consistent with established industry initiatives such as The Recycling Partnership.

There is no “one-size-fits-all” solution, however, and the “best” approach may vary by community. Some of the reasons for this include:

- State laws, regulations and legal precedents may authorize or limit the types of funding mechanisms they can implement;
- Local governments may or may not contract for services, and the nature of such contracts can vary significantly;
- Local governments may or may not have hauling or facility fees, franchise fees or other funding mechanisms;
- Historical practices and existing contractual relationships may limit options;
- Some communities may own recycling or solid waste facilities, which affects economics; and
- Political and philosophical orientation of decision makers and communities may influence views on which approaches work best, and which should be avoided.

Some local funding mechanisms tied to the waste management/recycling system align with the core principles and could ultimately become part of “preferred practices” promoted in an industry initiative.

The details behind these mechanisms vary greatly and can directly impact how well a particular mechanism rates in practice. With that caveat, some top examples for discussion include:

- Municipally-set rate-based funding mechanisms with imbedded incentives to recycle, such as pay-as-you-throw pricing (#1) and bundled fees that provide universal recycling access at no additional charge can fully fund ongoing operating costs. When implemented as part of municipal contracts and franchise agreements, they can also include a mechanism for adjusting rates and additional recycling incentives.

- Private hauler recycling rates can be set to cover costs and strongly incentivize commercial recycling, usually when backed by strong local policies that require or incentivize commercial recycling (this is also covered under #1).
- Revenue from the sale of recyclable commodities (#2) can sometimes cover processing costs, especially during strong markets and for certain material types.
- Local government recycling service and processing contracts can imbed incentives for increased recycling, for example, through revenue sharing arrangements (#2) that share risk while providing an upside to haulers and processors for increased tonnage, or that structure franchise, permitting or licensing fees (#5), hauling service fees (#6) or facility fees (#8) in a way that incentivizes recycling.
- Per-ton disposal charges (#4) can provide significant revenue, while incentivizing recycling through the tip fee differential (although revenues will decline as recycling levels and other waste reduction efforts increase).
- Other local waste management funding mechanisms tied to local taxes (e.g., #3) or flat fees on generator accounts (#7) can provide some revenue and diversify sources, but may not be reliable (if a dedicated assessment for recycling is not established) or may not be set at a level that generates sufficient funding (due to competition with other essential local services such as fire and police).

The above local funding options are mainly used to cover ongoing operational costs. However, they are also sometimes used for certain one-time expenditures to start or expand operations, and the revenue stream is needed to secure one-time loans and investments (including bonds) needed to increase capacity and improve operations.

From an industry perspective, local funding mechanisms tied to the waste management system may be less controversial than industry-derived funding, since CPG companies are not directly impacted. However, certain local stakeholders may have strong opposition to certain funding mechanisms. For example, private haulers and landfill operators often oppose increased disposal fees, and community residents and affected businesses may oppose increases in solid waste fees and rates.

Make Limited, One-Time Investments to Help Expand/Strengthen Collection and Processing Programs

As discussed above, most CPG industry stakeholders strongly suggested that industry should not be responsible for ongoing operational costs related to recycling collection and processing. However, several expressed support for limited, one-time investments to help local collection and processing programs expand or become stronger. The Recycling Partnership provides a model for this type of support, including grants to help purchase carts and other infrastructure requirements, and to design public education and other strategies to increase participation and capture rates while reducing contamination.

Partner with State and Federal Programs on Select Projects Benefiting All Covered Packaging Formats Equally

This strategy could potentially involve joint investments in specific projects and/or promoting stronger state/federal recycling funding programs. Stronger state and federal funding can complement all other funding sources and play a role in meeting all four types of funding needs. Also, state and federal programs may be strong partners in one-time industry investments aimed at achieving recycling expansion goals.



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A few state funding mechanisms may have the highest potential to satisfy core principles and funding needs. Many states generate significant revenue through state-level disposal surcharges (#10) which also provide a recycling price incentive. A downside is that, unless protected through a state constitutional amendment or other means, such funds can be swept easily for other purposes by legislators. In fact, one option for industry consideration would be to seek to re-shift swept funds intended for recycling back to their originally intended use. Also, funding from disposal fees will decline as recycling rates and other waste reduction efforts increase. Another option is state hauling service taxes (#12), which may generate less revenue than disposal surcharges (and may not provide a direct incentive to recycling) but may provide a more reliable source of revenue as it is less directly tied to the amount of waste disposed. State bonds (#14) are sometimes used to support recycling. State bonding authorities may facilitate bonds to generate revenue for new facilities developed by private firms or public-private partnerships. In some cases, state bonds backed by tax revenues have been used to help local programs start or expand.

Regardless of the funding source, many state and some federal programs offer grants, loans or other funding/technical assistance (#13) that can complement or directly partner with industry-funded initiatives to help local programs expand or modernize, conduct public outreach and/or market development, or undertake research and system optimization activities.

As with the local waste management system funding options described above, industry stakeholders may not have strong objections to these funding approaches as they are not directly impacted by them.

Address Financing Barriers and Make Targeted Strategic Investments to Leverage Current Financing Sources

As mainstays of the established U.S. business financing industry, investors and lenders (#16 and #17) meet most of the need for capital investments in the U.S., and financing is generally available to well-qualified projects. However, some recycling projects face barriers due to real and perceived risks related to markets, pricing, government policies, evolving waste streams, unproven technologies or other factors. The Closed Loop Fund provides a model for industry activities aimed at engaging and strengthening access to capital by recycling ventures, including making targeted, strategic investments that leverage existing sources to address funding gaps and weaknesses in current recycling systems.

Identify and Implement a New Funding Mechanism that Addresses Industry Concerns

Companies and industry organizations have launched a wide variety of voluntary initiatives to promote recycling. Most are sector-specific (#24), spearheaded by trade associations covering particular product or packaging types, such as the Carton Council. These initiatives may cover certain costs to help expand markets, improve processing facilities and/or provide tools to help local programs improve. But these efforts are narrowly targeted and do not provide broad funding.

Recently, two multi-sector industry initiatives (#25) to strengthen recycling have garnered attention and are establishing models that could potentially be expanded. The Recycling Partnership focuses on helping local collection and processing programs adopt best practices, providing tools and a degree of funding to select communities. The Closed Loop Fund provides low-interest loans and other types of financing to public and private projects aimed at increasing recycling and lowering costs to make recovered materials more cost competitive with virgin feedstock.



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While most industry stakeholders are supportive of the voluntary approaches generally, most also acknowledge that voluntary approaches suffer from three main drawbacks. First, the funding generated is usually small compared to the full array of needs. Second, future funding is not guaranteed and, therefore, cannot be relied upon. And third, under a purely voluntary approach not all firms in a given market segment will fully participate, thereby triggering concerns over free riders.

In this white paper for consideration, we have identified two alternative funding mechanisms that can derive substantial additional revenue from the product/packaging supply chain:

1) Mandated Supply Chain Funding Mechanisms

Although many industry stakeholders are opposed to any type of mandate, some industry stakeholders view retail fees (#18) as a preferred approach, especially in lieu of other mandated options that may be in place or under consideration in some states. Fees per transaction can be small but still generate substantial revenue overall, and they can be structured in a way that addresses many concerns over equitability across market/industry segments. A mandated retail fee system can also include a sunset date, as a recent program in Delaware that helped fund a transition to universal recycling did.

2) Statutorily Authorized Cooperative Initiatives

Statutorily authorized cooperative initiatives (#20), although not yet applied to the recycling arena, provide an intriguing model that many stakeholders interviewed for this project found worthy of additional consideration. “Checkoff” programs are a type of such initiative that have been implemented for 22 agricultural industries (e.g., paper, milk, beef and almonds) to provide a framework to pool their resources and combine efforts to develop new markets, strengthen existing markets and conduct important research and promotion activities. (See Appendix A for additional information.) In the current Checkoff program model, a federal agency is authorized to broadly organize the effort, appointing industry members to a board that implements and oversees the program. Companies within specified market segments make funding commitments as well as can serve on the board. When a specified percentage of market share is fully committed, the initiative is launched and at that point participating firms are obligated to provide funding into the program. In existing models, the initiatives typically involve national advertising campaigns to promote product groups. However, the model could be adapted to broadly promote recycling and/or to undertake more focused educational campaigns in targeted markets, perhaps backed by other industry activities aimed at demonstrating successful local recycling models. The model could also potentially provide industry support to address other funding gaps as discussed above.

Although some industry stakeholders are opposed to mandatory participation programs on principle, most acknowledge one strong benefit of mandates: They have the potential to address the so-called free-rider dilemma, since all companies covered by the law are obligated to comply or face enforcement penalties. Legislation can also provide relief from potential commerce clause concerns triggered when competing firms collaborate.

In addition to the above two options for structuring funding from industry, there are a large number of other options for how industry funding could be structured and costs allocated across companies, each with many pros and cons. It may be useful to further brainstorm and evaluate



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with industry stakeholders whether it is possible to design an optimum structure that can be supported, whether in a voluntary or mandated program. As part of a continuing dialog, the Project Team suggests that these and other potential structures for industry funding be “left on the table” in an effort to identify the best approach.

8. Next Steps: Advancing and Implementing a Funding Initiative

Drawing on CPG industry stakeholder feedback, this white paper presents a framework for designing a public-private partnership to increase funding for recycling. The framework includes definition of 26 alternative funding mechanisms and a set of guiding principles for use in evaluating funding systems. For discussion purposes, four optional industry strategies are identified:

- *Promote stronger local funding systems;*
- *Partner with state and federal programs on select projects benefiting all covered packaging formats equally;*
- *Address financing barriers and make targeted strategic investments to leverage current financing sources; and*
- *Identify and implement a new funding mechanism that addresses industry concerns.*

Also for discussion purposes, this white paper identifies two potential options for a new industry based funding mechanism (e.g., mandated supply chain funding such as a retail fee, or statutorily authorized cooperative initiatives).

Recycling matters to consumers, and it stands as a central component of the circular economy and the overall economy. To make recycling work, additional funding is needed. It is the Carton Council’s hope that the results of this research will be helpful in informing discussions of funding mechanisms for advancing recycling in the United States.

Appendix A: Detailed Descriptions of Funding Options

Table 1 in Section 3 lists 26 identified funding mechanisms that are, or could be, used to support recycling. Below are brief descriptions and examples of the optional funding mechanisms listed in Table 1, along with some additional explanation and examples for further clarification.

Funding from the Local Waste Management System or Taxpayers

Fees and Revenues Paid to Service Providers

Private waste and materials management companies (and in some cases municipalities and other governmental entities) provide hauling services and operate recycling, disposal and other facilities as a business enterprise. Fees paid to service providers include:

- **User fees (#1)** – This is one of the more common funding mechanisms for recycling services. Service fees include those fees paid by local governments to contracted service providers and paid directly to service providers by residential and commercial generators. It may also include “user fees” or “utility fees” paid for solid waste and recycling services paid via a utility bill or direct payment for bags under a PAYT program. Charges may be different for recycling, organics management and/or disposal, and may be blended or structured to subsidize recycling with disposal revenue. Contracts can include periodic rate adjustments as costs change, and may incorporate



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recyclable commodity revenue sharing (see #2). The fees charged by private waste management firms are heavily influenced by: government contracts (which can be structured to incentivize diversion and facility investments); established government policies (which may, for example, require provision of recycling services, variable rate pricing, and/or bundled pricing); and local competition, distance to recycling and disposal facilities, density of collection routes, and customer demand. Often communities that charge residents service fees to cover contract costs face political pressure not to increase fees. Most stakeholders do not oppose service contract approaches where they already exist; however, in communities that currently use tax-based funding, there may be strong opposition to what may be perceived to be new fees, and concerns over illegal dumping. The increasing cost/decreasing revenue trend is leading haulers and MRF operators to approach municipalities about renegotiating their contracts to provide additional revenues, which are needed to maintain their viability.

- **Revenues from the sale of recyclable commodities (#2)** – Recycling revenues are generally seen as supplemental funding by local programs, particularly under current market conditions, although they may provide the main source of funding for some processing operations. These revenues are subject to market fluctuations and, therefore, relatively unstable and unpredictable. In some cases, a revenue share may be in place to share revenue with contracted suppliers (e.g., local governments) of material to the MRF. Some haulers and MRF operators are adjusting fee structures/contracts to account for swings in commodity prices.

Other Local Government Funding Mechanisms

Many communities contract for solid waste management and/or recycling services, typically on behalf of residential generators but sometimes for commercial generators as well. Others provide residential and/or commercial services directly through municipal crews and derive funding through a variety of funding mechanisms. They include:

- **Funding from local property taxes (#3)** – This is one of the most common funding approaches. Local taxes may be allocated to recycling programs via an allocation from the general fund, or a line-item assessment on an individual's property taxes specifically to fund these services. Where in place, taxpayer funding is usually not opposed unless increases are proposed. Many communities, however, have experienced taxes being allocated to purposes other than what they were originally intended for. Often, solid waste districts' taxes are better protected from being diverted, as they are collected specifically to fund the system and, therefore, do not compete with other services. Other local governments use line-item assessments and special funds, which can provide some protection from being diverted. Funding solid waste and recycling from the tax base generally does not provide an incentive to reduce the amount of trash generated/increase the amount recycled, unless a base fee is charged through taxes, and additional fees are charged through per-bag fees (#1) under a PAYT system.
- **Per-ton disposal surcharge (#4)** – These surcharges, usually assessed at disposal facilities, help fund solid waste management and recycling services. Often, these funds supplement funding from other sources charged at the local level and are often used to cover planning, management and outreach, but may also cover a portion of direct operations. For communities with relatively low diversion rates, disposal revenue may be relatively stable; however, areas with high diversion experience declining revenue as disposal tonnages

decrease. Disposal fees are relatively easy to collect and low in cost to administer and, depending on their magnitude, can provide an incentive to recycle vs. dispose of waste.

- **Municipal license/permit/franchise fee on haulers (#5)** – Usually a supplemental funding mechanism, the structure of such fees dictates their stability and impact. For example, a permit, license or franchise fee on hauler services that is a set percentage of customer fees for disposal, organics and recycling may generate much more stable revenues than one based on the size of containers provided. In addition, haulers may adjust their pricing in unexpected ways in response to fees that vary for recycling, organics and/or disposal. Such fees rarely provide strong incentives or raise sufficient amounts of funding to fully support strong programs. However, such fees are generally not at risk of being diverted to other uses.
- **Tax on hauling services (#6)** – Though not a widely used funding mechanism, some local governments, like Ramsey County, Minnesota, charge a tax on trash hauling services. The fee is typically based on garbage collection service provided and can be based on other factors, such as volumes handled or number of pulls. Ramsey County calls this a County Environmental Charge – though it is essentially a tax, as it is levied on the value of MSW services. In Ramsey County, the CEC is 28 percent of the cost of residential MSW collection (including multi-family dwellings) and disposal services, or 53 percent of the cost of non-residential MSW collection and disposal services. The CEC must be charged as a separate line item on the customer’s bill. The fee is intended to serve as a disincentive to dispose of waste, as the CEC is not levied on recyclables or yard trimmings to be composted. Such fees are subject to frequent (e.g., annual) adjustments, based on service levels. Such fees are less subject to fluctuations from increased diversion activity than disposal surcharges, as they are levied on the cost of service, not the tons disposed.
- **Flat fee per waste generator account (#7)** – Though not a widely used funding mechanism, some local governments, including Frederick County, Maryland, fund some solid waste services via a flat fee per waste generator account. In Frederick County, an annual fee of \$49.52 is charged via a line item on the tax bill, for example, to cover the estimated annual cost of waste disposal. The purpose of this fee is, in part, to direct the flow of waste, as tip fees are not charged at the disposal facility on MSW generated within the county. Similar fees may be used to pay for recycling services. This type of fee is generally not subject to diversion for other uses.
- **Facility Fee (#8)** – Facility fees, often called permit fees, are generally charged to owners/operators of solid waste and materials management facilities in order to cover costs associated with facility permitting, monitoring and post-closure activities. Such fees often do not fund other aspects of solid waste management/recycling service costs and are generally not at risk of being diverted.
- **Bonds Issued by Local Government (#9)** – Sometimes used to finance local facilities.

Funding from Non-Local Government Sources

Government Assessments

The following funding sources from non-local government sources may be used to help fund solid waste management and/or recycling programs:



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- **State-level disposal surcharge (#10)** – Some states assess a disposal surcharge on each ton of waste disposed (e.g., Pennsylvania, Illinois, Ohio, Michigan), which is often supposed to be used in whole or in part to fund recycling programs. Often, however, these funds are diverted to other uses. State-level disposal surcharges may pose less of a competition issue among disposal facilities than locally implemented disposal surcharges. This funding mechanism can generate significant revenue; however, states have experienced declining revenues as disposal decreases due to light-weighting and higher diversion, as well as changes in consumption.
- **State general fund allocation (#11)** – State general fund revenues are often allocated to recycling and solid waste programs. Often, for example, recycling grants and technical assistance are funded through such revenues, as well as staff overhead costs. Tax-based funding is stable in the sense that taxes are consistently paid into the system (although income-based taxes can fluctuate based on economic conditions and population fluctuations) and can provide a significant source of revenues that do not decline as recycling increases; however, general fund revenues often compete for other uses. Most states go through an appropriations process annually, so it can be challenging to make long-term plans for projects and programs. Also, there is no information “feedback loop” that provides generators with an incentive to reduce waste, or that the management of waste and materials requires funding.
- **State tax on hauling services (#12)** – Though not a commonly implemented mechanism, some states (Minnesota and Washington) have implemented a tax on hauling services. The tax is a separate line item on the customer’s bill, and hauling companies remit this tax to the state. The amount of the tax in these states is based on a percentage of total receipts of garbage collection services but could be charged with different percentages for each type of service (e.g., recycling, organics and disposed waste). Another alternative is to base the tax on the level of service (i.e., container size provided or actual weight of materials shipped). The structure and rate of the tax impacts its ability to provide adequate funding and the stability of the revenue source. In Minnesota and Washington, the taxes apply only to the garbage portion of service, so as not to provide a disincentive to recycling. One of the reasons the states selected this mechanism is that it is more stable than a disposal surcharge would be, in the face of declining disposal. On the other hand, it is more cumbersome to implement, as there are more haulers than disposal facilities.
- **Federal/state grant and loan programs (#13)** – Many states and the federal government have implemented programs, including grant programs, to support recycling over the years, such as planning and outreach programs funded in rural areas by the Department of Agriculture, market development programs funded by the U.S. EPA, and research projects funded through the Department of Energy. These ad hoc programs have historically not been predictable and only the direct recipients benefit for a limited period. A relatively new matching grant program, “Reducing Embodied Energy And Decreasing Emissions (REMADE) in Materials Manufacturing” through the Department of Energy (DOE) is designed to help create new technologies for reuse, recycling and remanufacturing of materials, with the goal of reducing energy consumption in the U.S. manufacturing sector by up to 6 percent.³ The program is funded with up to \$70 million through 2020.

³ <https://energy.gov/eere/articles/energy-department-announces-70-million-new-remade-america-institute>

- **State/federal issuance of taxpayer-backed bonds (#14)** – At least one state, Connecticut, raised funds to develop recycling infrastructure in the 1990s through the issuance of bonds. And, the California Pollution Control Finance Authority has issued many bonds with proceeds going to a variety of recycling and solid waste management facilities. As with other infrastructure needs like highways, this can be an effective approach to fund one-time capital costs but is not viable for ongoing operations or long-term needs.
- **Allocation of proceeds from other industry tax/fee programs (e.g., GHG or oil/gas surcharges) (#15)** – At least two states (California and Connecticut) have allocated funding from greenhouse gas cap-and-trade programs to fund recycling infrastructure. And some states, like Washington, have allocated funds from taxes on petroleum-based products and pesticides. While there is potential to provide relatively large amounts of funding from such programs, there is strong competition with other uses, and the application of this approach is only viable in states and regions that have such programs in place or could implement them.

Funding from Lenders and Investors

Investors also help fund recycling systems. Funding from investors often helps companies conduct research and development, develop new technology, or expand. Whether publicly or privately held, companies involved in recycling can seek funding through investors.

- **Stock sales (#16)** – Publicly held recycling companies range from micro cap to large cap (e.g., Waste Management, Inc.; Republic Services, Inc.; Casella Waste Systems, Inc.; Schnitzer Steel, Inc.; etc.). Such companies can obtain funds by issuing stock.
- **Private investment/loans (#17)** – Private companies involved in recycling can potentially obtain funding through private investors – whether they are individuals or venture capital fund managers.

Funding from the Product Supply Chain

Funding from the product supply chain can be initiated by a government entity, or by supply chain stakeholders themselves. These mechanisms are described below.

Government-Initiated Funding Mechanisms

State Legislatures across the U.S. have proposed and considered a wide range of legislative approaches that involve deriving funding from the product supply chain in one way or another. However, to date only a relatively small patchwork of such policies has been adopted.

- **Retail product/packaging fees (#18)** – Retail packaging fees with a limited term have been adopted (and are now sunset) in Florida and Delaware, where funds were used for a portion of one-time infrastructure expansion investments. Because of the sunset, the programs were, by definition, not meant to be long-term funding strategies. Depending on the amount of revenue generated, these types of fees can cover one-time capital investment needs. Hawaii has a retail fee in place on glass containers, which is ongoing in nature and, therefore, provides ongoing revenues to help fund glass recycling programs throughout the state. Retail fees can be a highly stable and effective funding source. However, in the past, states have witnessed funds managed by government agencies being swept for other uses, which has been relatively common with state tire funds. Many companies and organizations in the product supply chain have



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opposed this approach, although there has been some support recently where some have supported retail fees as part of a legislative deal to eliminate deposit-return programs (e.g., as was recently proposed in Massachusetts).

- **Gross receipts taxes (#19)** – Gross receipts taxes have been implemented in five states – Nebraska, New Jersey, Tennessee, Ohio and Washington. These states assess a tax on certain types of entities based on their annual sales revenues. These taxes are typically referred to as “litter taxes,” as they are levied on businesses that manufacture, wholesale or retail types of goods that are thought of as being commonly littered. Examples include beverage containers, snack foods and fast foods. Virginia has a similar “litter tax” that charges a flat fee annually to certain types of businesses. Such programs can potentially raise significant funds for litter reduction and recycling efforts, but typically provide only supplemental revenue to such programs, if revenues are not diverted altogether for different purposes, as these funds are commonly diverted to the general fund.
- **Statutorily authorized cooperative initiatives (e.g., Checkoff programs) (#20)** – While not related to recycling as currently implemented, the U.S. Department of Agriculture has implemented research and promotion programs (R&P Programs) to generate demand for 22 commodities. Legislation requires non-exempt companies in several industries to contribute financially to fund cooperative marketing initiatives, after the initiative is first approved by a majority of industry members, based on a vote. Industry examples include cotton, milk, beef and, recently, paper through the Paper Checkoff program. For each of these programs, a specific industry-run organization (such as a Board) is formed to administer and contract to carry out the order of the program. While there is no precedent for applying such a program to recycling, and it is not immediately clear which governmental agency or department would authorize such a program (though the Commerce Department might be a possibility), there may be potential for a Checkoff type of program to be implemented across industries that produce and/or brands that use packaging.
- **Extended Producer Responsibility (EPR) – shared cost model (#21)** – The EPR shared cost model is a legislated funding system in which brand owners that sell products in packaging and printed paper producers participate in covering some of the costs of the recycling system operated by local governments. With the shared cost model, the portion obligated by industry may be based upon a certain percentage of system costs (in Ontario, Canada, brand owners’ share covers 50 percent of net program costs, or a total fixed dollar obligation (fixed producer cost model). Another theoretical variation, the functional split model, obliges industry to take full responsibility for certain recycling program components (e.g., processing), while the government sector retains responsibility for other system components (e.g., collection). Under full industry responsibility EPR (#22), industry is entirely responsible for the recycling system. For both shared cost and full responsibility models, brand owners’ individual cost obligations may be based on net recycling cost per unit or pound, or on market share. Some programs also incorporate incentives and/or penalties based on life-cycle sustainability factors such as recycled content, recyclability, renewable resource use, light-weighting, material type recovery rate etc. Per-unit costs may be visibly shown to consumers (i.e., on receipts) or imbedded in the purchase price (i.e., internalized). While no EPR program covering packaging has been adopted in the U.S., they are in place in Canada, Europe and many other parts of the world. EPR programs in the U.S. to date are limited to difficult-to-manage items, such as mercury thermostats, fluorescent lighting, electronics, paint and mattresses.



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- **EPR – full industry responsibility model (#22)** – Under this model, industry has full financial and operational responsibility for management of post-consumer packaging in order to meet government-defined recycling (and in some cases recovery) targets. Both EPR models have a number of different variations, such as reliance on single versus competing producer responsibility organizations (PROs) to handle the compliance needs of obligated parties.
- **Funds from deposit-return systems (#23)** – Deposit return systems, or “bottle bills,” as they are commonly called, encourage the return of covered beverage containers for refund, and sometimes provide funding for recycling (or other environmental initiatives) through a portion of escheats. They can be effective in recovering covered packaging but have historically met with strong industry opposition within the product supply chain. Some states have experienced funds being diverted to other purposes, and in some states, beverage distributors retain some or all of the escheats.

Voluntary Industry Initiatives

In recent years voluntary initiatives, which may be ongoing or ad hoc in nature, have successfully secured industry funding to support various recycling needs, ranging from operations and capital investments to the long-term needs of recycling market development, research and systems optimization. However, as voluntary programs with limited funding, their coverage is usually directed at specific projects or community programs and not comprehensive with respect to the recycling system as a whole. Voluntary industry initiatives may be undertaken by a single company but are commonly undertaken by an industry trade association addressing a specific type of packaging, or via a multi-stakeholder group addressing multiple material types. The following are examples of specific variations:

- **Sector-specific recycling support (#24)** – The Ag Container Recycling Council’s pesticide container recycling program is a unique example of a program that provides a share of funding for packaging recycling operations for a targeted segment. The Carton Council, similarly, has provided resources to improve access to recycling of cartons, although many of their efforts aim to boost curbside recycling overall.
- **Multi-sector recycling support (#25)** – As mentioned earlier in this paper, two voluntary industry programs have been launched in recent years that broadly seek to strengthen municipal recycling programs for a broad range of types of packaging and printed paper: The Recycling Partnership and the Closed Loop Fund. Certain other organizations have also funded various multi-material projects, including the American Beverage Association and Keep America Beautiful.
- **Financial incentives for adopting low environmental impact behaviors (#26)** – An example of such behavior could be use of renewable or recycled content feedstocks. The Carbon Impact Factor (recently broadened to Commodity Impact Factor), for example, is a system that could reward suppliers of recovered commodities (e.g., MRFs) that are documented to reduce greenhouse gas emissions and achieve other sustainability goals, assuming that manufacturers and/or product brand owners are willing to pay a premium for such “low-impact” feedstocks. It would also provide investment opportunities for multinational corporations to demonstrate their efforts to reduce carbon intensity. This, however, has not advanced beyond the proposal stage to date.

Appendix B: Detailed Evaluation of Alternative Funding Mechanisms

Table 1 in Section 3 offers a short list of recycling funding options suggested for further consideration by stakeholders, along with a limited rationale for the options included. These funding mechanisms are described in Appendix A. As described in Section 3 a comprehensive, detailed evaluation of recycling funding mechanisms is beyond the scope of this report. This is because of:

- The large number of funding mechanisms (26), each of which can be implemented in different ways that may influence how it rates against certain characteristics;
- The large number of characteristics identified (12), which different stakeholders may define and weight in different ways, and the fact that two of the characteristics (K and L, as listed in Table 2) may depend on the subjective perspectives of different stakeholders, and may be difficult to objectively evaluate without additional stakeholder engagement;
- The need to overlay consideration of the potential for each funding mechanism to contribute to satisfying the assumed, intended uses (as identified in Table 3);
- The fact that individual mechanisms are almost always used in combination with others, and this can influence its intended role and how well it rates against the ideal characteristics;
- A lack of readily available data on past performance of funding mechanisms; and
- The time and budget constraints of this project.

Notwithstanding these challenges, Table B-1 on the following pages graphically summarizes a high-level assessment of how well each of the funding mechanisms identified in Table 1 of the main report rates against the three core principles and 12 ideal characteristics presented in Table 2 of the main report. Each category of funding mechanisms is assessed in terms of how well it can satisfy the specific, assumed funding roles identified in Table 3 of the main report. This is intended as a tool to help stakeholders discuss the pros and cons of different funding mechanisms.

The Project Team developed this assessment to provide a tool for broadly comparing the advantages and disadvantages of alternative funding mechanisms, and as a starting point for stakeholder discussions. The authors acknowledge that in many cases the assessment is somewhat subjective and/or may depend on assumptions not provided in this appendix. The Project Team's main conclusions regarding preferred funding mechanisms, along with a brief rationale, are presented in Section 3.

Table B-1 Evaluation Summary: Does the Funding Mechanism Satisfy Key Characteristics of Core Principles for Identified Role?

Usually Yes Sometimes/Maybe/Variable Usually No

Category and Funding Mechanism	1. Reliable					2. Efficient and Effective			3. Equitable and Fair			
	(A) \$ is Predictable	(B) Low Risk of Re-direct	(C) Low legal or leg risk	(D) Can Withstand Market Volatility	(E) Stable \$ When Diversion Increases	(F) \$ Tied to need, uses & Goals	(G) Reasonable Admin & Implementation	(H) Includes Incentives	(I) No Free Riders	(J) Transparency and Accountability	(K) Viewed as Fair and Equitable by Industry	(L) Acceptable Shared Role to Industry
Funding from the Local Waste Management System or Taxpayers	Fees and Revenues Paid to Service Providers											
	1. User fees paid by service recipient to service providers (whether public or private)											
	2. Sale of recyclable commodities											
	Other Local Government Funding Mechanisms											
	3. Funding from local property taxes (e.g., allocation or line-item assessment) to fund private contracts/public services											
	4. Per-ton disposal surcharge											
	5. Municipal license/permit/franchise fee on haulers											
	6. Tax on hauling services ²											
	7. Flat fee per waste generator account											
	8. Facility fees (e.g., permit fees)											
9. Bonds (issued by local government)												



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Category and Funding Mechanism		1. Reliable					2. Efficient and Effective			3. Equitable and Fair			
		(A) \$ is Predictable	(B) Low Risk of Re-direct	(C) Low legal or leg risk	(D) Can Withstand Market Volatility	(E) Stable \$ When Diversion Increases	(F) \$ Tied to need, uses & Goals	(G) Reasonable Admin & Implementation	(H) Includes Incentives	(I) No Free Riders	(J) Transparency and Accountability	(K) Viewed as Fair and Equitable by Industry	(L) Acceptable Shared Role to Industry
State and Federal-Government Funding from the Waste Management System or Taxpayers	10. State-level disposal surcharge	Orange	Orange	Yellow	Orange	Orange	Yellow	Green	Green	Green	Yellow	Green	Green
	11. State general fund allocation	Orange	Orange	Yellow	Green	Green	Yellow	Green	Orange	Green	Yellow	Green	Green
	12. State tax on hauling services	Yellow	Orange	Yellow	Green	Yellow	Yellow	Green	Yellow	Green	Yellow	Green	Green
	13. State/federal grant and loan programs	Orange	Orange	Yellow	Yellow	Green	Green	Green	Yellow	Green	Yellow	Green	Green
	14. Bonds (backed by state or federal government)	Yellow	Green	Green	Yellow	Green	Green	Yellow	Orange	Green	Green	Green	Green
	15. Allocation of proceeds from other industry tax/fee programs (e.g., GHG or oil/gas surcharges)	Orange	Orange	Orange	Yellow	Green	Yellow	Green	Orange	Green	Green	Green	Green
Funding from Lender	16. Stock sales – publicly held companies raise funds by offering stock	Yellow	Green	Green	Orange	Green	Green	Orange	Green	Orange	Green	Green	

Category and Funding Mechanism		1. Reliable					2. Efficient and Effective			3. Equitable and Fair			
		(A) \$ is Predictable	(B) Low Risk of Re-direct	(C) Low legal or leg risk	(D) Can Withstand Market Volatility	(E) Stable \$ When Diversion Increases	(F) \$ Tied to need, uses & Goals	(G) Reasonable Admin & Implementation	(H) Includes Incentives	(I) No Free Riders	(J) Transparency and Accountability	(K) Viewed as Fair and Equitable by Industry	(L) Acceptable Shared Role to Industry
	17. Private investment/ loans—publicly and privately held companies raise funds through loans or equity financing (e.g., venture capital or private investors)												
Funding from Product/Packaging Supply Chain	Government-Initiated Funding Mechanisms												
	18. Retail product/ packaging fee (e.g., non-refundable recycling fee)												
	19. Gross receipts tax (e.g., litter tax based on % of sales)												
	20. Statutorily authorized cooperative initiatives (e.g., Checkoff Programs)												
	21. Extended Producer Responsibility (EPR) – shared cost model												
	22. Extended Producer Responsibility (EPR) – full industry responsibility model												
	23. Funds from deposit-return systems												
	Voluntary Industry Initiatives												
	24. Single-sector recycling support – (e.g., Ag Container Recycling Council program,												

Category and Funding Mechanism		1. Reliable					2. Efficient and Effective			3. Equitable and Fair			
		(A) \$ is Predictable	(B) Low Risk of Re-direct	(C) Low legal or leg risk	(D) Can Withstand Market Volatility	(E) Stable \$ When Diversion Increases	(F) \$ Tied to need, uses & Goals	(G) Reasonable Admin & Implementation	(H) Includes Incentives	(I) No Free Riders	(J) Transparency and Accountability	(K) Viewed as Fair and Equitable by Industry	(L) Acceptable Shared Role to Industry
	Carton Council, specific brands)	Yellow	Green	Green	Yellow	Green	Green	Green	Orange	Orange	Yellow	Green	Green
	25. Multi-sector support (e.g., Recycling Partnership, Closed Loop Fund)	Orange	Green	Green	Yellow	Green	Green	Green	Orange	Orange	Yellow	Yellow	Yellow
	26. Financial incentives for beneficial behaviors (e.g., carbon efficiency)	Orange	Orange	Green	Yellow	Green	Orange	Orange	Green	Green	Yellow	Green	Green

Appendix C: Overview of the USDA Paper Checkoff Program

Checkoff Programs in General

Checkoff programs (also referred to as USDA Research and Promotion Programs) exist for 22 agricultural products in the U.S. including milk, almonds, beef, cotton, and paper. Their purpose is to maintain and expand markets for an industry's products. The programs are authorized by [the Commodity Promotion, Research, and Information Act of 1996](#).

Programs are established by an affirmative referendum of a majority of the voting companies, who represent a majority of the volume of the product that would be covered by the program. Each program is governed by an Order issued by the USDA that sets the parameters of the program.

Each program is administered by an industry-nominated board of directors appointed by the Secretary of Agriculture. By law, the board must reflect the geographic distribution of domestic production and the quantity of imports. The geographic distribution of the board is reviewed at least every five years. Responsibilities of the board include:

- administer the Order,
- develop annual budgets,
- invest funds,
- accept participant contributions,
- contract to carry out the Order, and
- ensure no lobbying or false or disparaging advertising is undertaken using program funds.

Funds may not be used for lobbying or advocacy, but can be used for informational, educational, and promotional activities in support of an industry's products. Approved Checkoffs undergo a follow-up referendum no more than seven years after the assessments begin. Referendums can also be requested at any time by the board, or 10 percent of those eligible to vote. The effectiveness of the program must be evaluated, by law, at least every five years.

The Paper Checkoff Program

- The main purpose is to maintain and expand markets for paper and paper-based packaging. Another stated purpose is to share information about the sustainability of paper and paper-based packaging.
- Paper and paper-based packaging companies voted to approve the Paper Checkoff promotion program in 2013, as 85 percent of the companies and 95 percent of the industry production covered voted in a referendum to approve the program.
- The [USDA Order](#) creating the program was issued in 2014.
- Companies that manufacture or import at least 100,000 tons of paper and paper-based packaging in the U.S. annually must participate.
- There are 55 companies that participate in the Paper Checkoff program.



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- There are 12 Board members – 11 representing manufacturers and 1 representing importers.
- At least once every five years, but not more frequently than once every three years, the Board will review the geographical distribution of the quantity of the Board members.
- The Order provides for an initial assessment rate of \$0.35 per short ton of paper and paper-based packaging domestically manufactured or imported.
- Annual revenues are estimated to be \$25 million.
- Two years after the Order becomes effective and periodically thereafter, the Board will review the assessment rate and, if appropriate, recommend a change in the rate – at least 2/3 of Board must approve of rate change.
- At least seven years after the Order becomes effective and every seven years thereafter, a referendum is to be held to determine whether manufacturers and importers favor the continuation of the Order. Majority must approve to continue and must also represent a majority of the volume of paper and paper-based packaging represented. Or, a referendum can be held:
 - At the request of the Board,
 - If at least 10% of members request it, or
 - At any time requested by the Secretary.
- The program is run by a staff of five.
- The program funded the *How Life Unfolds*[™] integrated marketing campaign, launched in July 2015. Ninety-five percent of funds raised by program went directly to campaign. Market research indicates that the campaign has increased positive attitudes about paper (mainly associated with how paper helps with education purposes) and lessened negative attitudes (regarding how confusing it is to recycle, waste creation, and perceived negative impact on environment).

Benefits of the program to industry include:

- Industry is in charge
- Industry members can cease program via referendum
- Threshold for small producers/importers
- No free-rider issue
- Provides a framework/structure for collecting fees/undertaking initiatives
- Industry votes, as to whether they want program to exist – 75% of industry participants must agree

Additional Information

What is a Checkoff program?

<http://www.paperandpackaging.org/what-is-a-check-off>

Guidelines for AMS oversight of Checkoff programs



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<https://www.ams.usda.gov/sites/default/files/media/RPGUIDELINES092015.pdf>

FAQs about Paper Checkoff program

<http://www.paperandpackaging.org/faq>

Press release describing affirmative vote to create program

<http://www.twosidesna.org/US/Paper-Check-Off-Referendum-Passes-With-Huge-Support>

Understanding the Federal Commodity Checkoff Program

https://pennstatelaw.psu.edu/file/aglaw/Federal_Commodity_Checkoff_Program_Michael_Sabet.pdf



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