



August 19, 2026

Washington Department of Ecology

Attn: Dan Weston, Recycling Reform Act Lead

Re: Public Comment for Washington's Preliminary Statewide Collection Lists

Designation(s) of Glass Collection

Dear Department of Ecology Staff:

The Glass Packaging Institute (GPI) offers the following comments on the Preliminary Statewide Collection Lists that the Washington Department of Ecology (Department) is developing as part of the Recycling Reform Act, which would make improvements to Washington's residential recycling system by creating an extended producer responsibility program (EPR) for residential packaging and paper products.

GPI is the North American trade association for the glass food and beverage manufacturing companies, glass recycling processors, raw material providers and other supply chain partners within the industry. GPI and its members work closely with local and state governments throughout the country on issues surrounding sustainability, recycling, packaging manufacturing, and energy use. We are working nationally and, in most states, to improve the glass recycling infrastructure and system to help achieve a 50 percent consumer glass recycling rate, and advance policies that further that goal.

Glass Container Recycling Background

Glass is a core circular packaging material which is reusable, refillable, and endlessly recyclable – regardless of how it's collected. Glass containers are largely used for food or beverage products, and glass is the only packaging material generally recognized as safe by the FDA for all food and beverage products. Over 70 percent of glass containers are used for some sort of beverage product. Public sentiment strongly rates glass as one of the most supported materials in the recycling stream, and glass has the strongest profile to aid in refillable beverage systems.

The glass container manufacturing industry has a significant stake in the effectiveness of glass recycling programs. Recycled glass is a key component of the manufacturing process. The industry purchases about 2.3 million tons of recycled glass each year and the average bottle or jar produced in the U.S. contains anywhere from 25 to 33 percent recycled glass, known as cullet. Glass made in regions with high glass recovery rates, such as deposit return systems, have much greater opportunity for more recycled content. For every 10 percent of recycled glass added to the batch mix, energy usage can

be reduced by two to three percent, with additional corresponding reductions in greenhouse gas emissions.

Regional Collection Considerations

Under the Department's current proposal, glass collection is appropriately designated for residential and public place collection. GPI does remind, however, that glass collection for residential in the state of Washington is very likely to be hybrid or multi-modal. In some regions there is efficient access to commingled stream glass processing; in other regions it might be more advantageous to have it collected separately in community drop systems or curbside.

Glass is unique in this characteristic, and the ultimate method for collection could also depend on the state's future vision for reuse/refill. It is also important to distinguish the difference between what is often more of a "logistics" issue rather than a compatibility or recyclability issue. The Department should reject the arguments of traditional commingled waste industry advocates that seek to classify glass as "depot-only." Nearly 70 percent of Washington residents already have curbside glass recycling access, and Washingtonians know and trust that glass is recyclable. With the advent of EPR, the waste and recycling industry argues that their highly contaminated, mixed material, small format residual stream has challenging commodity market economics; however, this is not the problem that community leaders need to be concerned about. Under EPR, it is now an issue for the Producer Responsibility Organization (PRO) to find end markets for the material. The glass industry has worked in Washington over the past seven plus years to creatively address logistics issues and is committed to continuing to work with the state and the CAA on addressing glass market issues.

Recognizing the needs of different regions of the state, GPI is advocating for open consideration of all viable methods of glass collection to promote greater consistency in materials accepted across the state and to improve recycling of materials consistent with EPR. This recommendation stems from years of ongoing dialogue with communities throughout Washington and the different capabilities of glass collection regionally.

To point to specific regional examples, jurisdictions in the northwest may want to continue to have their glass collected in a commingled curbside stream, while jurisdictions in the Puget Sound and greater Seattle-Tacoma region may want to improve their recycling yield by sorting glass into a separate container for curbside collection and/or moving back to a dual-fiber only stream. Similarly, jurisdictions in the Vancouver/Portland metro area region may want to take advantage of the established glass processing facilities nearby and utilize separate containers for glass collection that can bypass sorting at commingled material recovery facilities (MRFs).

Additionally, communities in the central and eastern regions of the state may continue to benefit from community drop off and depot collection systems, or what is commonly referred to as a "hub and spoke" model, which GPI has been working on for several years in the Tri-Cities area. This system has proven to efficiently move collected glass to processing end markets and can even be integrated into the state's PRO— Circular Action Alliance (CAA) – producer plan where CAA would have operational oversight of this collection program.

Benefits of Multimodal Glass Collection

The benefits of permitting glass to be collected through various collection modalities is numerous. First, data shows that alternative collection of glass separate from other materials, such as a separate container and community drop off, provides the second highest yield of recycled glass (second to a deposit return system) that can be used to make new containers at nearly 92 percent and 60 percent usability,

respectively. Compare this to a single stream of commingled recyclables, which results in a yield of a 40 percent glass suitable for recycling into new containers (see Attachment A). Limiting glass collection to a single collection modality, particularly residential or public place collection as currently proposed, greatly limits the recovery rates of glass to domestic end markets in need of recycled glass to make new glass containers. It will also increase the cost of processing and sorting glass from non-glass residue (e.g., small plastics, metal, fiber) that ends up in the glass stream at a MRF that processes single stream recyclables. Therefore, GPI advises the Department not to limit the ways in which glass can be collected and recycled into new containers.

When glass is removed from a commingled stream, the commodity value of all materials increases because of less contamination across all streams; and the same is true for fiber, which is a contaminant in every other commodity stream.

Evaluation Criteria

With regard to specific notes in the preliminary collection list workbook, GPI has some clarifying comments:

- There are no issues related to color or shape of containers of ordinary container glass (soda-lime glass rather than borosilicate or other glass-like ceramics) that affect its recyclability. GPI is working on a “design for recycling guide” that will speak to the best practices for labels and decorations that may inhibit the sortability of the glass or affect yield loss. However, all non-decorative container glass is domestically recyclable with a variety of end uses and domestic (North American) end markets.
- GPI would assert that the Statewide Collection Access (Access) criteria rating for glass is not “concerning.” Nearly 70 percent of Washington residents already have curbside access, with most of the remaining residents having community drop off access for glass recycling. This widespread access does not meet the definition of “concerning,” and instead indicates a strong rating. Even if the assessment determines resident reliance on community drop off as a negative mark on Access, then a moderate rating would still be a more appropriate rating.
- Similarly, GPI advocates that a glass rating for processing and sorting compatibility criteria could be rated as strong, but that moderate may be a fair assessment given the evaluation lens relies on integration with existing infrastructure. The only negative notion here stems from the commingled MRF industry who are concerned with the material moving through their equipment; however, with the proper equipment, design of basic glass breakers, and adequately maintained screens, the glass commodity does not touch 98 percent of the MRF. Separately collected glass poses no issues.
- Regarding Responsible End Markets (REMs) rating and notes, GPI would like to correct the notes on mileage. Our typical range for trucking glass is 150-200 miles to end market, and longer by rail. Both glass processors that handle the glass commodity from Washington have rail access and have increased their rail capacity in the past few years. The logistics issues from Eastern Washington are just that – logistics that can be handled by hub and spoke – and are not “end market” issues.
- The yield loss ranking for glass should be considered strong, as there is very little material loss from the glass recycling process. The data cited from the Glass Recycling Fund (GRF) is more of an indication of the yield due to higher levels of non-glass contamination. CAA yield rating for REMs is based on the facilities’ ability to process the target material and glass as a material. Glass processors should not be given demerits because the existing system is engineered to push contamination into the glass commodity stream.
- GPI could spend a whole day on the chicken/egg question of which commodity “causes” the contamination of the other in a commingled system. All commodities are contaminants to another – and every other material is found in large presence in the glass stream while very little glass is found

in some of other streams. The primary cause of the contamination starts with hydraulic pressure on the recyclables, which is not helpful to any of the core materials.

- GPI takes the position that life cycle assessment (LCA) has no place in the review of the material for collection listing determinations. We are unaware of the statutory requirement to involve LCA, which is inherently biased due to what impacts cannot and are not measured in the current LCA analysis – namely the economic, social, and health impacts of mismanaged waste on the environment and human health. Glass is inert and free of toxins. Glass does not require heavy water use or chemical use to recycle. Mismanaged glass in the environment does not leach chemicals, nor is it mistaken for food by wildlife. These attributes are not considered in most LCAs. Glass is the only readily available, viable material for multiple turns for reuse and refill of beverages and liquids for human or animal consumption. The note that the benefits of recycling glass are entirely derived from avoided glass production seems too narrow of an interpretation. We would like to see the LCA citation for these findings.

GPI appreciates the opportunity to provide these comments to the Department for its consideration about how glass should be collected within the state. Glass has enormous value when collected in a manner that produces the highest quality. Please help us keep glass out of trash and choose glass.

Sincerely,



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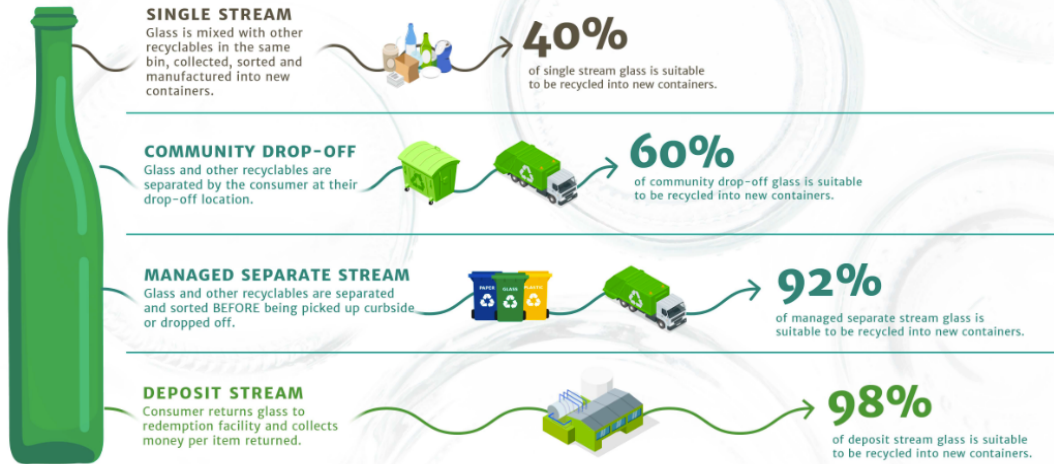
Attachment A: Infographic on Efficiency and Yield-Loss from Different Glass Collection Streams

Attachment B: Comparison of Glass Streams by Collection Method



UNDERSTANDING RECYCLING STREAMS

How glass is collected affects the quality and volume of the material and influences yield and value.



Each system has its advantages. Single stream is convenient, produces high volume, but has higher contamination. Separate stream or drop-off is typically a cleaner glass stream with lower glass volume. Deposit systems produce high glass volume and higher quality glass.

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Attachment B



Pictured on the left is glass collected separate collection or alternative collection method. Pictured on the right is processed MRF "glass."