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Testimony of Susan V. Collins  
President of the Container Recycling Institute

Senator Jeff Merkley  
Chair, Subcommittee on Chemical Safety, Waste Management, Environmental Justice, and  
Regulatory Oversight  
Senate Committee on Environment and Public Works

Thursday, September 28th, 2023  
10:00 AM EDT  
Room 406  
Dirksen Senate Office Building

Dear Chair Merkley and Members of the Subcommittee:

The Container Recycling Institute (CRI) appreciates the opportunity to provide comments on solutions to address beverage container waste in the United States. CRI is a nonprofit organization and a leading authority on the economic and environmental impacts of used beverage containers and other consumer product packaging. Our mission is to make North America a global model for the collection and quality recycling of packaging materials.

Given our expertise in these areas, CRI would like to provide the following information regarding existing and proposed policies to improve the collection of single-use beverage containers.

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## **Introduction**

The inability to effectively recycle beverage containers in most U.S. states is increasingly contributing to our plastic pollution, marine debris and climate crises. However, we know that one solution works – deposit return systems (DRS), which enable consumers to return empty bottles and cans to a redemption location and receive back the deposit they paid upon purchase. Decades of data have shown that these systems are the single most effective solution to increase container recycling rates, reduce associated litter and marine debris, lower energy use, avoid greenhouse gas emissions, decrease waste collection and landfilling costs, and provide more of the high-quality scrap manufacturers need to make new products.

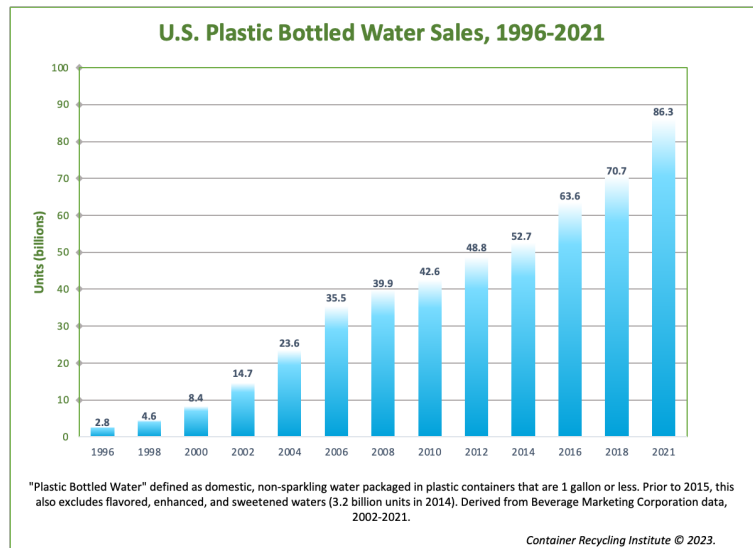
As detailed in this letter, a national DRS would maximize the collection of single-use beverage containers to support economic growth, domestic manufacturing jobs, a circular economy and a more sustainable future.

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## The Problem We Are Trying to Solve

### Growth in Beverage Container Sales

Beverage container sales have grown by 45% in the last two decades, from approximately 205 billion units sold in 2000 to more than 298 billion bottles and cans sold in 2021. In the same period plastic water bottle sales skyrocketed from 8 billion to 86 billion – an astonishing increase of 975% (BMDA, 2023). This increase in overall beverage sales is due to both population growth and an increase in per-capita consumption.



Non-carbonated beverages have accounted for all of the non-alcoholic sales growth over the last 21 years, while carbonated beverage sales have dropped slightly. The lion's share of the non-carbonated, non-alcoholic sales increase comes from bottled water packaged in PET plastic, and to a much lesser extent, in HDPE plastic. Bottled water became the largest beverage category in 2015, and now comprises 29% of all beverage sales, or nearly a third of all beverages sold.

### Recycling Rates Remain Stagnant While More Containers Are Wasted Each Year

In the last two decades, national beverage container recycling rates have remained about the same, around 35%, while production of containers has increased. With the combination of higher total sales and a stagnant recycling rate, the result is the number of beverage containers wasted every year continues to grow. U.S. consumers wasted 137 billion beverage containers in the year 2000, and the wasting reached 184 billion by 2019, an increase of more than a third over those two decades.

There are very low recycling rates in the United States for aluminum, plastic and glass containers, as most are being landfilled, incinerated or littered (Advancing Sustainable Materials Management, 2020). As of 2019, the national average container recycling rate stood at 34% (BMDA, 2023). More than 75% of all plastic ever produced ends up as waste, and of the mismanaged waste, about 87% of this waste becomes plastic pollution (WWF, 2019).

When glass, aluminum and plastic containers are wasted rather than recycled, they must be replaced with containers made from 100% virgin materials, whose manufacture requires tremendous amounts of energy, and generates carbon dioxide and other greenhouse gasses. Half of the virgin plastic produced between 1950 and 2016 occurred starting in 2000, resulting in exponentially growing plastic production (WWF, 2019).

## Brands Don't Have Enough Material to Meet their Recycled Content Goals

Given recycled content mandates in some jurisdictions and international brands' stated goals for reducing plastic waste, there will be new demands for recycled materials in the future, and it has been widely observed that, under business as usual, availability of recycled materials will be insufficient to meet future demands. The brands will not be able to reach their recycled content goals unless beverage container materials are collected for recycling at much higher rates than they are today. Brands need approximately twice as many used aluminum cans, and a tripling of recycling rates for plastic and glass bottles to meet corporate goals. For plastic in particular, there are recycled content laws in 4 states, with looming deadlines in the near term of 2025 to 2030.

## Beverage Containers Fill Up Our Landfills and Incinerators

According to CRI's data, it is estimated that millions of tons of beverage containers are ending up in our landfills and incinerators or littered instead of being diverted into a recycling system. In 2021 alone, 782,000 tons of aluminum containers, 8.8 million tons of glass containers, 2.6 million tons of plastic containers, and 436,000 tons of carton or foil containers were not recycled, adding up to a total of 12.6 million tons of wasted beverage containers.

According to the EPA's Advancing Sustainable Materials Management: 2018 Tables and Figures, 35.68 million tons of plastic were generated in municipal solid waste (MSW) and ended up in our landfills. Containers or packaging (14.53 million tons) accounted for roughly 40.7% of all plastic generated. Beverage containers are the single largest component of plastic packaging: per CRI calculations, the quantity of PET and HDPE beverage containers generated alone was about 3.63 million tons in 2019. That is a quarter of all plastic containers and packaging in the US, and 10.2% of all plastic generated in the US.

### Dollar Value of Materials Being Wasted

The beverage container materials that we litter or send to landfills and incinerators each year would be worth more than \$2 billion if we recycled them instead.

Ideally, post-consumer material should be used to make new products instead of discarded into landfills or incinerators. In 2019, 822,354 tons of usable aluminum from aluminum cans were not recycled and were disposed of instead. That amount of wasted aluminum on its own could be used to rebuild the entire 2021 U.S. fleet of commercial aircraft 17.3 times over, totaling over 108,000 mid- and large-sized planes. (BMDA 2023)

## Beverage Containers Make Up a Lot of Our Litter

Beverage containers make up a large volume of litter. Other methods of litter prevention, like litter taxes and education campaigns, are marginally effective. Moreover, litter is not just a nuisance on the sides of our roads and in our public spaces but is costly to society. Between the increasing amount of solid waste thrown away and the very slow deterioration of that waste, marine litter found at sea, on the seafloor and coastal shores is growing dramatically. Litter is polluting our soil, posing a health hazard to the public, and placing a burden on municipalities, taxpayers and businesses. A Keep America Beautiful study estimated that businesses and governments are collectively spending more than \$11.5 billion per year to clean up litter.

Beverage containers typically comprise a significant portion of roadside litter. Keep America Beautiful's 2021 report on litter estimated that there were nearly 2.8 billion pieces of beverage container litter near U.S. roadways and waterways, accounting for approximately 6% of all litter in the United States.

### Beverage Container Waste Increases Greenhouse Gas Emissions

Beverage containers make up less than 6% (by weight) of municipal solid waste, but the upstream environmental effects of container wasting are disproportionately high (“Municipal Solid Waste,” 2013). The production of beverage containers results in higher greenhouse gas emissions and energy use than the average of the other material types in the waste stream.

Aluminum can waste accounted for 50% of the total greenhouse impacts of 2019 container wasting, compared to 18% for both PET plastic and glass, 10% for cartons, 3% for HDPE plastic and 1% for foil pouches. Since the energy required to produce aluminum from virgin resources is so high, and the recycling rate remains around 45% for aluminum, beverage can waste continues to exact a heavy environmental toll. Much the same can be said for PET bottles: the benefits of producing a relatively lightweight container have been offset by skyrocketing sales, very low recycling rates and high energy requirements.

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## **A Solution to the Beverage Container Recycling Problem**

CRI believes that a solution to the problems described above may be a **national deposit return system** (described below.) The first beverage container deposit law was implemented in British Columbia, Canada in 1970. Decades of data have shown that beverage container deposit return systems (DRS) are the single most effective solution to increase container recycling rates, reduce associated litter and marine debris, lower energy use, avoid greenhouse gas emissions, decrease waste collection and landfilling costs, and provide more of the high-quality scrap manufacturers need to make new products.

### What Is a Deposit Return System?

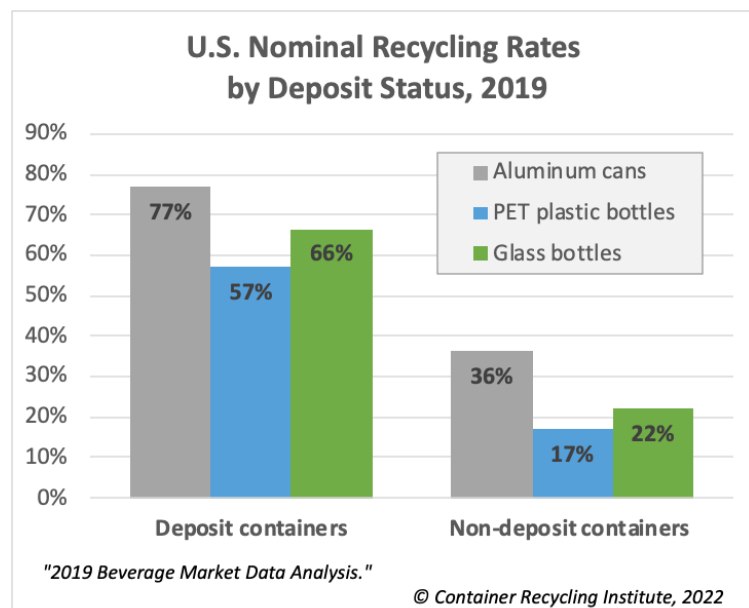
A beverage container deposit return system is one that promotes the return of containers for recycling by issuing a minimum refundable deposit when every eligible container is sold and returned to a retailer, redemption center or a reverse vending machine. When a retailer buys beverages from a distributor, a deposit is paid to the distributor for each can or bottle purchased. The consumer pays the deposit to the retailer when buying the beverage. When the consumer returns the empty beverage container to the retail store, redemption center, bag drop system, or to a reverse vending machine, the deposit is refunded in full. The retailer recoups the deposit from the distributor, plus an additional handling fee in most U.S. states. The handling fee, which generally ranges from 1 - 6 cents per container, helps cover the cost of handling the containers. DRS create a privately funded collection infrastructure for beverage containers and make producers and consumers (rather than taxpayers) responsible for their packaging and waste.

With so many recyclable materials out there, some may wonder why it's worthwhile to focus on beverage containers. A deposit encourages people to return these containers, keeping them off the streets and out of the waterways and wilderness. According to industry estimates, about one-third of beverages are consumed on the go—away from the home recycling bin and often in places where recycling is not available.

## Benefits of a Deposit Return System

### More Beverage Containers Will Be Recycled

A well-run national container deposit law that covers all beverage types (except milk and milk substitutes) with a 10-cent deposit would be the single largest recycling program in the nation. It would boost the nation's recycling rate of beverage containers from the current national rate of 34% to 80% and provide 8.5 million new tons of recyclables for the nation's container



manufacturers. This would improve the nation's overall recycling rate for all materials by three percentage points.

If the U.S. were to implement a national DRS, CRI estimates that the country would recycle almost 114 billion additional containers annually—or nearly 8.5 million tons of metal, glass, and plastic—over and above the recycling currently taking place (assuming an 80% recycling rate). By increasing collection and recycling of plastic, aluminum and glass containers, DRS mitigate their negative environmental effects.

### Deposit Return Systems Reduce Greenhouse Gas Emissions

By reducing the need to make new bottles and cans from virgin materials, this additional recycling would eliminate about 8.4 million tons of greenhouse gas emissions annually: an amount equivalent to taking more than 1.8 million cars off the road for a year. (BMDA, 2023).

### Deposit Return Systems Reduce Energy Use

Approximately 12.6 million tons of beverage containers were “wasted” (i.e., landfilled, incinerated or littered) in 2019. In replacing the 184 billion bottles and cans that were wasted with new containers made from virgin materials, the energy equivalent of 236 trillion BTUs was consumed, which is enough to meet the total residential energy needs of more than 3 million

American homes, or more than the total number of occupied housing units and apartments in the cities of Los Angeles and Chicago combined (BMDA, 2022).

### Deposit Return Systems Promote Job Creation

In the 10 states where DRS are in place, it is estimated that there are 20,000 total existing jobs resulting from them. According to estimates, a national DRS would add over 80,000 jobs, meaning that if the U.S. had a national deposit law with a redemption rate of 80%, it would support more than **100,000 jobs** in the United States – 20,000 that already exist, and 80,000 new. Depending on the DRS system parameters and performance, these systems create 11 to 38 more jobs for beverage containers, on average, than a curbside recycling system. DRS systems also require between 1.5 to 4 times more employees than curbside recycling to collect, sort and transport containers. Therefore, DRS systems increase employment rates and contribute to economic growth (Returning to Work, 2011).

### These Programs Support Domestic Materials Industries

Domestic container material industries that make glass, plastic and aluminum containers rely heavily on recycled materials from DRS programs to supply their factories and supply chains. More than 33% of beverage containers that are recycled in the United States come from DRS programs.

In a joint statement issued on April 20, 2020, four of the largest trade associations for beverage container materials – the National Association of PET Container Resources (NAPCOR), the Aluminum Association, the Can Manufacturers Institute and the Glass Packaging Institute – made clear the critical importance of deposit beverage containers in the materials supply chain. The statement read that, “material from beverage container deposit systems generally accounts for 20%-60% of the inputs our industries use to make our essential packaging” (“Trade Associations”, 2020). Beverage containers collected through a deposit system typically suffer less breakage and contamination than those collected through other systems; that means *more* beverage containers can be recycled into new containers than containers recycled through other means.

### Beverages Going Through Deposit Return Systems Have a Greater Potential to Be Recycled

Beverage containers are a subset of packaging with the greatest potential to be recycled and reused through DRS. Minimal sorting is needed in a DRS program since there is no commingling with other material types like in curbside systems. Additionally, beverage containers collected through a deposit system typically suffer less breakage and contamination than those collected through other systems; that means more DRS containers can be recycled into new containers than containers recycled through other means.

### Deposit Return Systems Are Effective in Reducing Litter

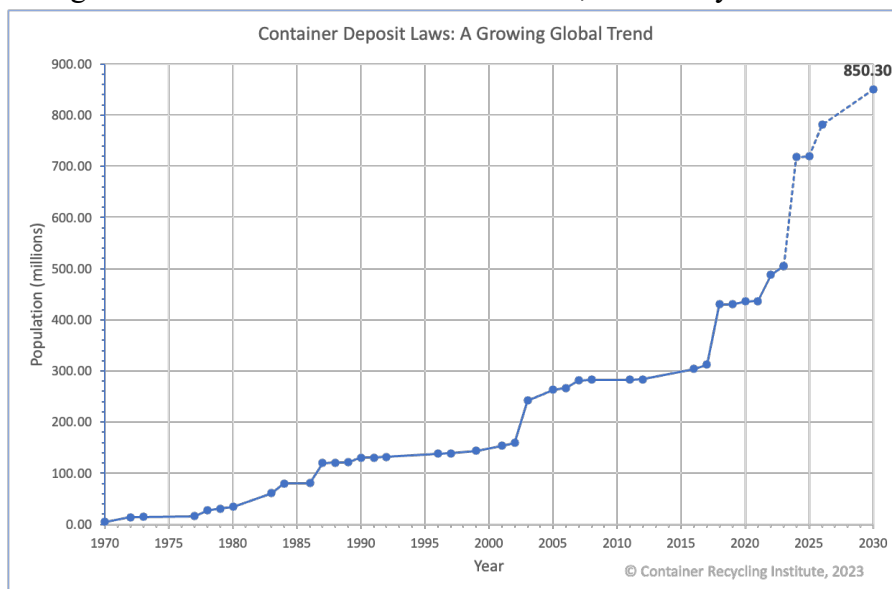
DRS are extremely effective in reducing litter, as shown in many of the states that already have these systems in place. In the 1970s through 1990s, government-funded studies conducted in seven states, pre- and post-DRS, showed reductions in beverage container litter ranging from 69% to 84% and reductions in total litter ranging from 30% to 65%. In 2018, the Commonwealth

Scientific and Industrial Research Organization (CSIRO), an Australian agency, found that the proportion of containers found in coastal debris surveys in both US and Australian states with a DRS was approximately 40% lower than in states without a DRS. Both the CSIRO study and the Keep America Beautiful 2020 National Litter Study indicate that a national DRS would have the potential to cut beverage container litter in the United States in half.

### Deposit Return Systems Are Not Funded by Taxes

Under a traditional municipal recycling program, taxpayers often pay for processing beverage containers they may not use. Deposit return systems decrease taxpayer burdens by shifting the costs from taxpayers to the beverage manufacturers. The deposit that a beverage consumer pays is returned to them in full when they recycle through a DRS. Thus, DRS place the cost of managing post-consumer beverage containers to those who manufacture, sell or buy them.

Handling fees are also not funded by taxes, but rather by beverage distributors. Handling fees provide retailers and redemption centers with compensation for collecting, sorting and preparing empty beverage containers for shipment, thus helping them remain economically viable. (Handling Fees Factsheet, 2023)



### Deposit Return Systems Are Popular and Growing Worldwide

The adoption of beverage container DRS continues to grow at a skyrocketing pace worldwide, as more and more governments recognize these programs’ value in dramatically increasing recycling rates. In 2016, 46 years after the introduction of the first DRS, 286 million people worldwide in 41 jurisdictions were covered by a deposit return system.

By the end of 2022, that number stood at approximately 444 million in 44 jurisdictions. Assuming that additional announced programs meet their implementation dates by 2026, DRS coverage will again rapidly grow, to 67 jurisdictions worldwide with a collective population of almost 744 million people — an increase of 160% in a decade.

Since the year 2016, 26 new DRS programs have become law (but many of them have not yet been implemented) throughout the world, including programs in the countries of Jamaica, Malta, Latvia, Scotland, Slovakia, Portugal, New Zealand, Singapore, Ireland, Mauritius, Belarus, Greece, Hungary, Romania, Turkey, the United Kingdom, Poland, Cyprus, the British Virgin Islands, Uruguay, the states of Australian Capital Territory, Western Australia, Victoria, Queensland, and Tasmania, in Australia and the state of Maharashtra, India.

## Deposit Return Systems Are Popular in the United States

Deposit return systems historically have enjoyed widespread public support on a state and national level. On the national level, the Keep America Beautiful 2020 National Litter Study reported results of a Public Attitudes Survey that indicated strong support of deposit laws as a means to increase recycling. Whether they were asked if they support a “refundable deposit” or a “rebate incentive,” more than 75% of respondents said they were in favor of these policies in their state.

According to public opinion polls in many states, expansion of existing state deposit laws is supported by 70-85% of the citizens in those states that have a DRS. Polls from Iowa, Michigan, Indiana, Massachusetts, Vermont, Tennessee, New York, Kentucky and Oregon have all shown that constituents in these states are in favor of having a new DRS or expanding the existing DRS in their state.

## Beverage Companies Want Recycled Materials Back to Meet Their Recycled Content Goals

CRI strongly believes that markets for deposit containers collected for recycling will grow in the coming years, in part because multiple global beverage brands have made public commitments to increase their use of recycled materials, as the table below shows.

<b>Selected plastics reduction commitments by global brands</b>		
<b>Company</b>	<b>Timeframe</b>	<b>Commitment or target</b>
Coca-Cola	by 2030	Equivalent of 100% of containers collected and recycled
Coca-Cola	by 2030	Average 50% recycled content in bottles
Danone	by 2025	100% of packaging reusable, recyclable or compostable
McDonald's	by 2025	100% of guest packaging from renewable, recycled or certified sources
Kraft Heinz	by 2025	100% of packaging recyclable, reusable or compostable
Nestlé	by 2025	100% of packaging recyclable or reusable

*Reprinted from CRI's Winter 2018 newsletter*

*© Container Recycling Institute, 2018*

These goals can only be met through the increased availability of high-quality beverage bottles and cans for use as feedstock in new containers. Only deposit programs consistently generate such high-quality containers. For example, deposit-grade PET bottles have recently had a value of 21¢ per pound, nearly twice the value of non-deposit, curbside PET (12¢ per pound).

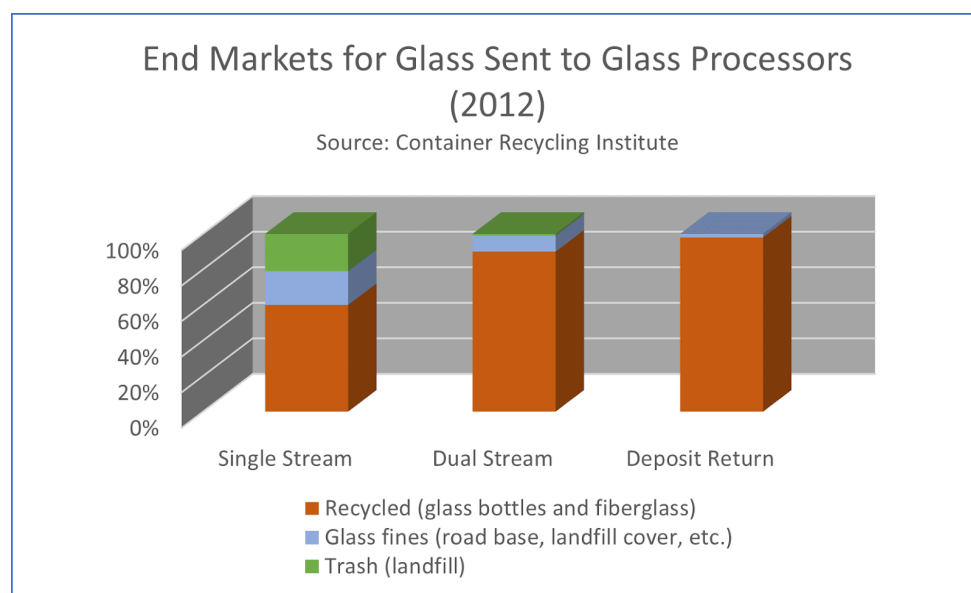
## Deposit-Covered Beverage Container Material Is Clean and High Quality

Not everything that is collected for recycling gets made into a new product. Breakage and contamination of collected materials often results in them being "downcycled" into something that cannot be recycled again, or sometimes just simply discarded. Beverage containers collected through a deposit system typically suffer less breakage and contamination than those collected through other systems such as curbside; that means more beverage containers can be recycled into new containers than containers recycled through other means.



A survey of a dozen glass processing facilities indicated that, on average, only 60% of glass from single-stream collection is recycled into containers and fiberglass. Nineteen percent is small broken glass ("glass fines") used for low-end applications such as road base or landfill cover, while the remaining 21% is unusable and sent directly to landfill (A Common Theme, 2012). Mixed glass from dual-stream systems yields an average of 90% recycled into containers and fiberglass, with the remaining 10% being glass fines used for low-end applications. Almost none of the glass in dual-stream systems gets sent to landfill. In deposit systems, 98% of collected glass material is recycled and only 2% is marketed as glass fines (A Common Theme, 2012).

Glass collected through a curbside system is not guaranteed to reach a glass processor. The nonprofit organization Northeast Recycling Council, Inc. (NERC) released a 2018 study stating that only "54% of the reported glass tonnage from Northeast MRFs [materials recovery facilities] are sent to glass processors to be cleaned" (Northeast MRF Glass Survey Report, 2018). More than



38% of the remaining MRF glass is sent directly to landfill: as landfill cover (23.5%), as roadbase/fill (0.5%) and as trash (14.7%). None of the remaining glass is sent for use to fiberglass manufacturers.

Not only is less plastic lost in the processing of deposit containers, the plastic

that comes from deposit bottles is also cleaner and more likely to be food-grade. In the United States, only food-grade material is compliant with regulations for food packaging. Because deposit programs only collect beverage containers, all material collected through deposit systems contain only 100% food-grade material. However, PET bottles collected through curbside may suffer food-grade quality degradation issues due to being recycled alongside non-food grade plastics.

A 2021 report by Stina, Inc. indicated that "Curbside collected PET is more likely to include both food and non-food containers, as well as opaque PET containers and missorted non-PET plastics." Non-food grade plastics include additives, inks and other chemicals not included in food-grade plastic, which makes them unsuitable for processing into food-grade plastic due to the risk of contamination. Because curbside collection comingles food-grade and non-food grade containers, both are often processed together at MRFs. This risks the non-food grade material contaminating any food-grade material, making it unsuitable to be utilized again as food-grade material. In contrast, The Stina, Inc. report further notes that deposit systems produce "readily recyclable high-quality material" for food-contact applications.

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A national deposit return system would not only solve many problems that the recycling industry faces, but bring in a variety of advantages that would benefit our environment, economy and generations to come.

Please contact me with any questions you may have.

Sincerely,

A handwritten signature in blue ink that reads "Susan Collins". The signature is fluid and cursive, with the first name "Susan" being larger and more prominent than the last name "Collins".

Susan Collins  
President, Container Recycling Institute

***About the Container Recycling Institute:** CRI is a nonprofit organization and a leading authority on the economic and environmental impacts of beverage containers and other consumer-product packaging.*

**Citations:**

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