



American Recycler

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FOCUS: Metals

Glass recycling makes a comeback

by MAURA KELLER

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Ferrous metal market remains strong



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The evolution of glass recycling has been a mixed bag of changing regulations by municipalities, outcries of consumers for glass recycling programs, and confusing messaging about the viability of glass recycling based on weight, contamination and transport costs.

According to the Glass Recycling Coalition, in 2015 and 2016, the story of glass recycling was often myopic and included myths about broken glass not being recyclable and no markets for glass, even in areas that were ripe with end markets.

“Though glass is not shipped overseas, it became the scapegoat for downed recycling markets in the face of China’s National Sword,” said the leadership at the Glass Recycling Coalition (GRC). “Municipal decision-makers were not equipped with the data to combat these myths and make informed choices about keeping their glass in programs. Often program managers were lured by discounted processing fees to



Glass recycling rates are not very high in the U.S. when compared to the rates achieved in Switzerland, Germany and other European countries.

dentists and consumers expect to be able to recycle glass.

“When municipalities removed glass from their programs a resounding wail of public disapproval followed since glass is considered a core recyclable,” the GRC said. “The increase in sustainability goals for local govern-

recycling. In fact, 2022 has been coined the International Year of Glass, according to the United Nations.

Archie Filshill, chief executive officer at AeroAggregates, a manufacturer of ultra-lightweight aggregates from 100 percent post-consumer recycled glass, said there is a push from several states across the country to increase the amount of recycled content in containers, both plastic and glass.

“Traditionally, recycled glass must be color separated and cleaned for containers and fiberglass,” Filshill said. Aero Aggregates recycles all kinds of glass and turns it into foamed glass aggregates that are used in the construction of roads, commercial developments, sewers, green roofs, concrete blocks, and building foundations. This year, the firm will recycle the equivalent of 500 million bottles.

“Efforts to recycle glass over the last few years have increased and there have been several developments for use of recycled glass in construction and industrial applications,” Filshill said. “One of the biggest challenges has been the cleanliness of recycled glass. Single stream glass, which is curbside collected material, has a lot of paper, plastics and other residuals that make it difficult

for end-users to process. This problem is compounded by the fact that the glass can be green, brown or clear and most end-users require recycled glass to be color sorted.”

Innovative Initiatives

Cameron Skinner, sustainability assistant in Georgia College’s Office of Sustainability said the push behind the glass recycling program at Georgia College (GC) came from a former SGA president who wanted to develop a solution to keep glass from going to the landfill.

Like other local municipalities in the U.S., Milledgeville-Baldwin County, where Georgia College is located, rescinded their glass recycling program due to commodity price changes and the lack of glass recycling infrastructure in the nearby area. So, what did GC do?

“We purchased innovative glass recycling technology that allows us to crush glass and turn it into a sand-like byproduct,” Skinner said. “GC is one of only a few colleges and universities in the U.S. that currently own and operate this type of waste reduction technology on campus.”

As Skinner explained, the implementation of the **See COMEBACK, Page A4**



Glass pulverizers, like this one manufactured by Andela Products, are often used in the recycling process.

keep glass out of their programs, unaware of the social and environmental impact that would cause.”

Since that time, consumer demand to have access to recycle their glass has contributed to creating glass recycling opportunities. In fact, according to a 2020 industry survey conducted by the GRC in 2020, 90 percent of resi-

ments and major companies also aided in a more proactive look at glass recycling to reduce waste and create circular solutions. For many, breaking down these myths and really understanding the glass recycling opportunities has been the principal barrier.”

For 2022, things are certainly looking up for glass

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Comeback

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glass recycling program has helped to increase the diversity of GC's waste reduction portfolio. GC has had a single-stream recycling program on campus since 2013, which includes paper, cardboard, paperboard, plastics #1 and #2, aluminum, tin and steel cans.

"Now that we can recycle glass, a very heavy material that is often sent to the landfill, we are one step closer to achieving a record-breaking institutional diversion rate," Skinner said.

Staff members from the Office of Sustainability oversee the collection, crushing, and distribution of the recycled crushed glass (RCG). Special glass recycling containers are available for drop-offs and a map of their locations can be found on the university website. Once the glass is collected, it is transported to the campus glass recycling facility where it is crushed and screened into five different grades. The byproduct is then stored and distributed for use.

"Since the implementation of the program in January 2021, we have been able to successfully divert over 5,300 lbs. of glass containers and are looking to grow the program soon," Skinner said.

Thus far, the college has used the RCG as a soil amendment in a large-scale landscaping project involved with the construction of a new Integrated Science Complex. This project involved spreading several cubic yards of RCG throughout the front lawn of the new science building to increase the drainage properties of the native soil.

"We also have plans to partner with GC's Department of Biological & Environmental Sciences to conduct lab analyses of the physical and chemical properties of the RCG, which will help guide future uses of the product," Skinner said. "As the program continues to gain popularity among campus community members, the GC Office of Sustainability may be exploring options to purchase glass recycling equipment with a higher capacity, potentially enabling us to expand services to the surrounding community."

Evolving Efforts

Today municipalities are reengaging with the public in an effort to increase the amount of glass recycling.

As the GRC explained, many municipalities have turned to contract negotiations as a solution.

For example, in the City of Houston, the city renegotiated its recycling processing contract for a 20 year contract with FCC Environmental Services in 2018. Since 2017, the City of Decatur, Georgia has had a successful separated curbside glass collection program. And places in Northern Virginia have been collecting glass in drop-off containers in their popular Purple Can club. Some places also have ongoing mobile glass recycling collection events.

All of these efforts have been coupled with education for consumers through bin stickers, local and national industry media, and social media and website updates.

Filshill added that most municipalities are trying to support recycling in general, which includes glass, plastic and paper. "There has been consider-

able education in local communities to help explain what can and cannot be recycled and to provide homeowners with labeled recycling bins," Filshill said. "The recycling stream will improve as the educational process continues, making it easier to get cleaner material."

Aero Aggregates decided early to vertically integrate and then installed equipment at each facility to clean glass received from local recycling centers. Aero processes mixed-color glass regardless of particle size, which also facilitates accepting glass from recycling centers. Starting in 2022, Aero is diverting the weight equivalent of over 500 million bottles from landfill each year.

From an industry perspective, the MRF glass recycling certification also has helped to highlight MRFs that see the value in cleaning and recovering glass in a single stream system. Launched in the Fall of 2019, the GRC MRF Glass Certification program has since been awarded 13 certifications: 1 bronze, 2 silver and 10 gold. In 2021, glass certification criteria was updated to prioritize end market consistency and more thorough glass cleaning before beneficiations.

The Glass Recycling Coalition offers education, partnerships and best practice solutions. "Over the past five years, the Glass Recycling Coalition's efforts have provided a truth check to glass recycling myths and have been instrumental in changing the tone of glass recycling for municipalities and the industry," the GRC leadership said. "GRC and its partners helped to feature best practice case studies and tools for municipalities, haulers and end markets to show that glass recycling can be effective in communities."

According to Filshill, there are a lot of residential communities across the country pushing for higher recycling rates, but they are somewhat limited by the demand for recycled materials. "The traditional markets for recycled glass include containers, fiberglass and abrasives, and these markets have continued to increase the amount of recycled content," Filshill said.



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Correction: With the article titled, "Catalytic converter thefts skyrocket" in the February 2022 edition, a photo of mufflers (which are part of the exhaust system, along with catalytic converters) was inadvertently used instead of catalytic converters due to an image labeling error.

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