



**GLASS RECYCLING
COALITION**



NERC
NORTHEAST RECYCLING COUNCIL

**PARTNERSHIPS TO
MAKE GLASS
RECYCLING WORK**

Thursday, March 23, 2pm ET

www.GlassRecycles.org

PRESENTERS:

Moderator: Mary Ann Remolador, NERC



Terrie TerMeer,
Ohio EPA



Angel Payne,
Logan County
Solid Waste



Ben Pedigo,
Rumpke Recycling



Michelle Goth,
Ripple Glass

TECHNICAL DETAILS

Your **control panel** to the right allows you to change audio vs. phone settings.

We want to hear from you!

Use the control panel to ask questions.


Questions?

Use Q&A feature **to ask questions during webinar**



A recording of this session will be available after the webinar has ended. GlassRecycles.org/webinars

WHO WE ARE



A unique, collaborative coalition focused solely on making glass recycling work

MEMBERSHIP



ArdaghGroup



GALLO GLASS
COMPANY



OWENS
CORNING



SIERRA NEVADA



BA
BREWERS
ASSOCIATION



STRATEGIC
MATERIALS
Recycling Earth's Resources



THE RECYCLING
PARTNERSHIP



ROCKY MOUNTAIN
BOTTLE COMPANY



ALLAGASH
BREWING COMPANY



FETZER
PIONEERS IN SUSTAINABILITY



NAIMA
NORTH AMERICAN INSULATION
MANUFACTURERS ASSOCIATION



PEGASUS
SUSTAINABLE SOLUTIONS



Pernod Ricard



RUMPKE



BALCONES
RESOURCES
Naturally Inspired Thinking



SIMS
MUNICIPAL
RECYCLING



REPUBLIC
SERVICES



National
Waste & Recycling
Association
Collect. Recycle. Innovate.



ISRI
Voice of the Recycling Industry™



RMC | Resource Management Companies



EMTERRA
Environmental



M
MACHINEX



Constellation
Brands



casella
RESOURCE SOLUTIONS



GLASS
COA

OUR FOCUS

All glass containers are continuously recycled to the highest and best use, maximizing economic, environmental and social benefits.



Best practices



Collaborating for success of glass recycling



Strengthening glass markets



Partnering with Glass Champions



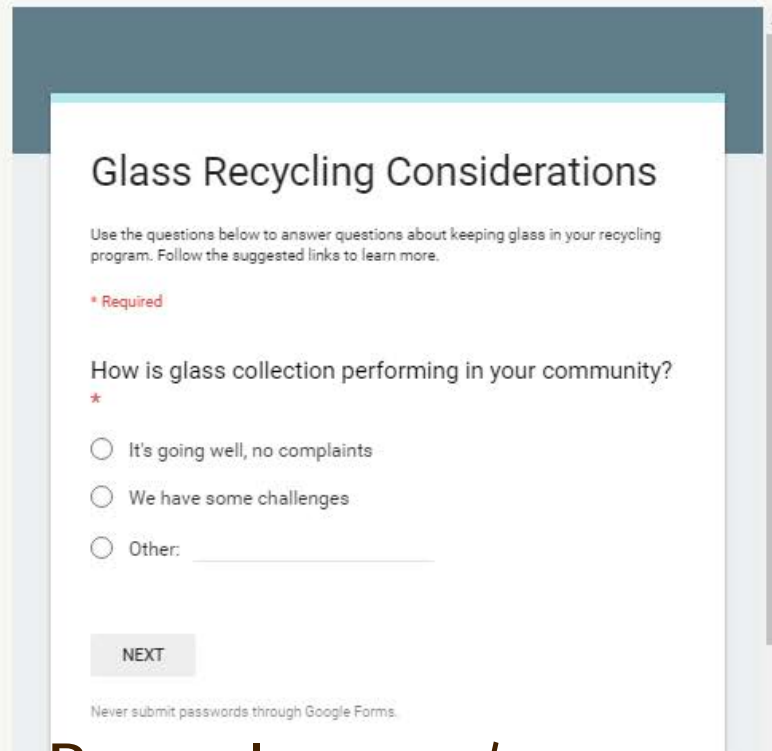
Providing solutions-oriented, public-sector resources

PUBLIC-SECTOR RESOURCES

[Home](#)[About Us](#)[For Consumers](#)[Tools](#)[Best Practices](#)[Membership](#)[News](#)[Contact](#)

RECYCLING PROGRAM CONSIDERATIONS

Use the following tool to assist you in making informed decisions about glass in your recycling program. Answer questions and follow the links to learn how other communities are making glass recycling work.



The screenshot shows a Google Form titled "Glass Recycling Considerations". The form includes an introductory paragraph, a red asterisk indicating a required question, and a radio button selection for "How is glass collection performing in your community?". The options are "It's going well, no complaints", "We have some challenges", and "Other: _____". A "NEXT" button is visible at the bottom of the form, and a footer note states "Never submit passwords through Google Forms."

[GlassRecycles.org/yourprogram](https://www.glassrecycles.org/yourprogram)

PUBLIC-SECTOR RESOURCES

GLASS RECYCLING BENEFITS

Find out how much glass is collected and recycled in an average residential program in a variety of collection and high-performing processing methods using this tool.

How much glass can be recovered & turned into recycled glass?

Collection System	Glass Collected from 5,000 HH (tons/year)			% Glass Yield at MRF		% Cleanup (Beneficiation) Yield		Glass Recovery Rate (Furnace-Ready)		Actual Glass Recovered after Yield Loss (tons)	
	Max.	Average*	Min.	Best Practice	Average Practice	Best Practice	Average Practice	Best Practice	Average Practice	Best Practice	Average Practice
Single Stream Carts - Weekly	385	209	58	90%	64%	84%	65%	76%	42%	158	87
Single Stream Carts - Bi-weekly	348	191	57	90%	64%	84%	65%	76%	42%	144	80
Single Stream, Glass Separate - Weekly	301	228	182	97%	95%	97%	97%	94%	92%	215	210
Dual Stream Bins - Weekly	284	149	80	92%	74%	95%	90%	87%	67%	130	99
Drop-off	182	104	78	97%	95%	97%	97%	94%	92%	98	96

What are the environmental & landfill savings for recycling glass?

Collection System	Carbon Emissions Avoided (MTCO2E)		Energy Demand Avoided (million BTU)		Avg. Landfill Tipping Fee (\$49/ton)		Number of Cars Removed from the Road per year		Number of houses powered per year	
	Best Practice	Average Practice	Best Practice	Average Practice	Best Practice	Average Practice	Best Practice	Average Practice	Best Practice	Average Practice
Single Stream Carts - Weekly	44.2	24.3	379.2	208.7	\$7,742	\$4,260	9.4	5.2	10.3	5.7
Single Stream Carts - Bi-weekly	40.4	22.2	346.6	190.7	\$7,075	\$3,893	8.6	4.7	9.4	5.2
Single Stream, Glass Separate - Weekly	60.1	58.8	514.9	504.2	\$10,512	\$10,295	12.8	12.5	14	13.7
Dual Stream Bins - Weekly	36.5	27.8	312.5	238.2	\$6,381	\$4,862	7.8	5.9	8.5	6.5
Drop-off	27.4	26.8	234.8	230.0	\$4,795	\$4,696	5.8	5.7	6.4	6.2

*Average glass collected from 5,000 HH used for actual recovery rate, environmental and landfill savings calculations.



NERC
NORTHEAST RECYCLING COUNCIL

Click on any state to
view state-specific contact
information and recycling
data



501(c)(3) organization

Celebrating our 30th
Anniversary

Work with 11 NE states on
sustainable materials
management issues.

www.nerc.org

Advisory Members

SUSTAINING MEMBERS



DISTINGUISHED BENEFACTORS



PRESENTERS:



Terrie TerMeer, Ohio EPA



Ben Pedigo, Rumpke Recycling

Rumpke Waste & Recycling



*Rumpke Material Recovery Facility
Cincinnati, Ohio*

- Rumpke traces its beginning to 1932 during the Great Depression.
- Even when collecting trash to feed livestock, the Rumpke family set up conveyors inside their barns to remove metals, rags and glass for reuse in recycling
- Today, Rumpke is one of the largest privately owned waste and recycling companies in the US.



The Rumpke Family Business is an American Success Story

Rumpke's Commitment: Diverting Glass from Landfills

- Glass bottles and jars make up 20 percent of the weight in curbside recycling programs.
- Landfill diversion is fundamental element of glass recycling evaluation.



Rumpke Glass Plant – Dayton, Ohio



Glass bottles and jars are integral components to recycling programs.

Rumpke's Commitment: Diverting Glass from Landfills

- Glass is a “legacy” commodity and should be an essential part of any comprehensive recycling program.
- Rumpke has invested \$7 million in a glass beneficiation system in Dayton, Ohio that prepares glass recycling for use in fiberglass and bottle glass manufacturing.



Glass bottles and jars are integral components to recycling programs.

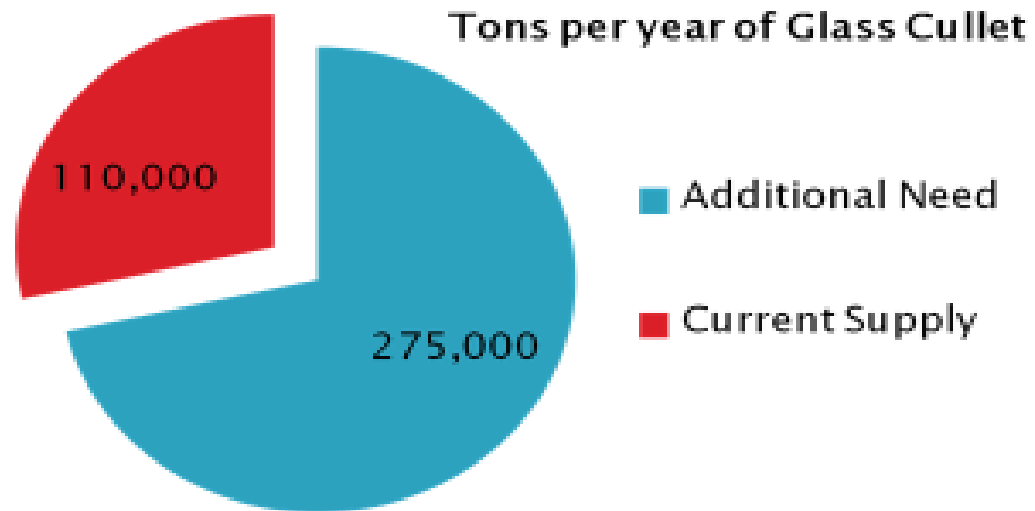


WHY PARTNER?

“Ohioans send to landfills most of glass containers produced”



Glass Study



Statewide Initiative

- Voluntary Bar & Restaurant Recycling;
- Establish 9 regional Glass Act Recovery Centers (transfer stations/glass depots) in Ohio - linked to processors;
- Create Glass Act Recycling Drop offs – located in existing drop off areas (Ripple Glass model)
- \$1 million



Commitment

- Supporting & implementing strategies that strengthen glass recycling programs across the state that can create a competitive advantage for Ohio manufacturers.
- Targeting new glass & creating positive solutions for districts to better manage their glass



Rumpke's Partnership with the State of Ohio

- Ohio agencies identified businesses that needed post consumer glass as a feedstock for their manufacturing process.
- An infrastructure was developed to link end users and post consumer glass generators with Rumpke.



*Clarity Optical Sorter funded by OEPA
Rumpke Glass Plant- Dayton, Ohio*



OEPA and ODNR play key roles in increasing glass recycling

Rumpke's Partnership with the State of Ohio

- The state of Ohio continues to provide grants to solid waste districts and businesses to better manage glass.
- Rumpke has received funding for optical sorting and cleaning equipment to process post consumer glass.



OEPA and ODNR play key roles in increasing glass recycling

Rumpke's 7 Million Investment in Glass Recycling

- Utilizing equipment from Austrian company, Binder+Co., Rumpke currently processes 4,000 tons per month of post consumer glass bottles and jars and is equipped to do more.
- Glass end users have tight parameters on contaminants- glass must be cleaned for end use.



The Rumpke Dayton Glass Facility provides market stability.

Rumpke's 7 Million Investment in Glass Recycling

- Rumpke provides glass processing for solid waste districts as well as regional MRFs.
- Through these partnerships, glass recycling can be dramatically increased.



*Flint glass storage area-
Rumpke Glass Plant- Dayton,
Ohio*



The Rumpke Dayton Glass Facility provides market stability.

Making Glass Recycling Work

- Residents want to recycle their glass bottles and jars.
- Rumpke continues to invest in recycling processing infrastructure for the future.
- Glass recycling should be a part of all recycling programs.



Rumpke has invested more than \$50 million on recycling upgrades since 2011.

Connect with Rumpke



Facebook.com/RumpkeCo



@RumpkeNews



Pinterest.com/RumpkeCo

Educational Resources: www.RumpkeCleanAndGreen.com



Keeping Neighborhoods Clean and Green Since 1932

PRESENTERS:



Angel Payne, Logan County Solid Waste

Logan County Ohio Glass Initiative



- ❑ Rural County, population 45,481
- ❑ Largest city, Bellefontaine
- ❑ Single county Solid Waste District
- ❑ Privately owned & operated landfill

- Strong Agriculture
- Strong Industry
- Strong Tourism

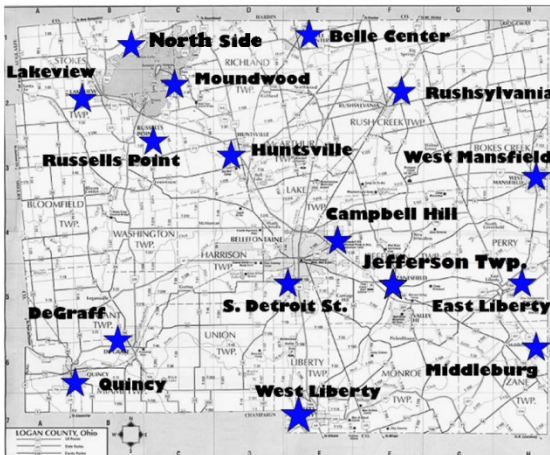


LoganCounty
SOLIDWASTE
MANAGEMENT DISTRICT



ZERO WASTE COMMUNITY ACHIEVEMENTS

- Logan County is a Zero Waste county
- High recycling rate (2015 ~77%):
- The system is **sustainable**:
 - ▣ PAYT Income is roughly 3 times the cost of operation:
 - ▣ 9% earnings from combined operation





HISTORIC CHALLENGE TO GLASS RECYCLING

- Unstable Markets
- High weight-to-volume ratio
- Separating by color
- Sell commodity by color
- Self transportation



THE PLAN

- Use adjacent and existing loading dock
- Construction of concrete pads
- Specifications:
 - 47' long x 16' deep (11'3" x 42" deep side wall)
 - Contains similar volume of a transport trailer





GOALS

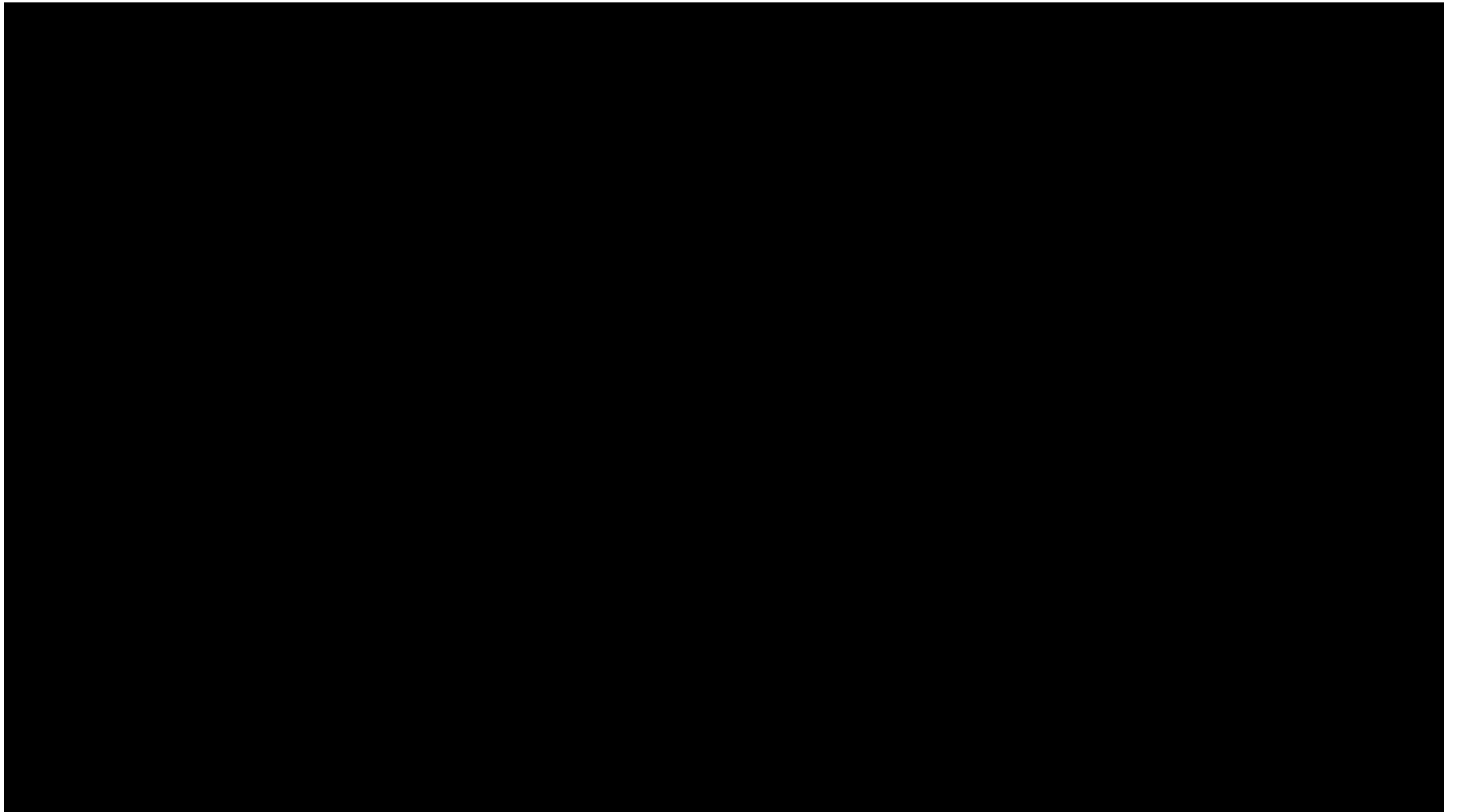
- Transform glass recycling to a financial net-positive activity
- Increase tonnage
- Recover 12-18 equipment hours per month
- Apply for grant funding to construct a Glass Depot



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PUSH-WALL

- Serves dual purpose
- Glass Depot and retaining wall for bale storage



LOADING TRAILERS

- Telescoping bucket used



SWEEPING

- After loading-out a trailer



WHERE DOES IT COME FROM?

Glass Sources:

- Municipal residential dual stream curbside program
- Residential and commercial drop off dual stream sites
- Limited commercial/institutional programs

Glass:

- Currently receiving about 10 tons per week (about 70% recovered)
- About twice the national average for recovery
- Expected to double with single-stream, bar & restaurant routes

THANK YOU!



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PRESENTERS:



Michelle Goth, Ripple Glass



rippleglass

www.rippleglass.com

bringing glass home

Bringing Glass Home™ in the kansas city region



www.rippleglass.com

bringing glass home

the need for glass recycling in kc

the people behind Boulevard Brewing Company wanted to find a way to reduce the amount of glass waste in KC



each year:

10 million empty Boulevard bottles found their way into the local waste stream

160 million pounds of glass containers end up in metro-area landfills

source: Boulevard Brewing Company, MARC SWMD



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our partners

Investors/Grant Funding



+ Individual investors

Partners



ArdaghGroup



www.rippleglass.com

bringing glass home

a local solution for kansas city

Kansas City's first truly **local** glass recycling company



collection



processing



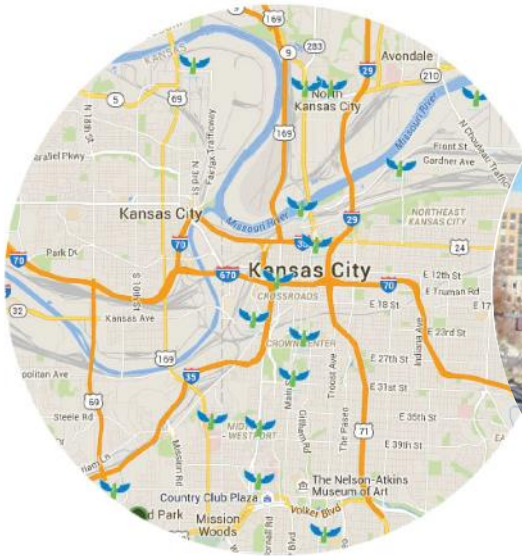
manufacturing



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kansas city collection network



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bringing glass home

The Ripple Difference



Vs.



Ripple Glass's bins offer a **fun**, aesthetic appeal towards recycling. Our bins are brightly colored and easily distinguishable from other trash and recycling receptacles.



www.rippleglass.com

bringing glass home

glass recycling is a win/win in kansas city



Bin hosts > Increased foot traffic = competitive advantage

Recyclers > Convenience

Municipalities > Remove tons from waste stream

MRFs > Operate with less liability

Partners > Positive community engagement

Ripple > Steady stream of clean material

End-users > First rate quality cullet for manufacturing

Our collection network has taken Kansas City's glass recycling rate from 3% to over **20% since 2009.**



www.rippleglass.com

bringing glass home

midwest community partnerships

Over **80 communities and businesses** outside of Kansas City collect glass that is processed at our Kansas City facility.



www.rippleglass.com

bringing glass home

partnerships with regional municipalities



Springfield, Missouri- 24%

From 300 to 1,500 tons annually in just five years through residential drop-off and downtown recycling program.

Branson, Missouri- 53%

Over a 50% recapture rate by advertising recycling centers to visitors and working with hotels, bars and restaurants



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bringing glass home

partnerships with regional municipalities



Fayetteville, Arkansas- 50%

Glass is collected at the curb and then hand sorted by the driver into a special compartment in the truck. Bar and restaurant glass is collected in 2-yard containers downtown.

Lawrence, Kansas- 30%

40% collected through drop-off network, 60% from MRF with glass clean-up system



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bringing glass home

Thanks!



www.rippleglass.com

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THANK YOU!

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