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## CLEAR INTENTIONS GRANT PROJECT FINAL REPORT

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August 7, 2015

RREO Grant Program  
Attn: Eric Heyboer  
Colorado Department of Public Health and Environment  
4430 Cherry Creek Drive South  
Denver, CO 80246-1530

Dear Mr Heyboer and the RREO Grant Committee,

Clear Intentions is pleased to present to the Colorado Pollution Prevention Advisory Board the Final Report for RREO's FY2015 grant award to Clear Intentions, LLC., Contract # 15 FEFA 73136. The report format follows the template you provided.

**Organization Name:** Clear Intentions

**Project Title:** Clear Intentions Hub-and-Spoke Glass Recycling Project

**Project Coordinator:** Brittany Evans

**Project Coordinator e-mail address and phone number:**

- bevans@clearintentions.glass, (303) 993-8221

**Name of person(s) completing this report:** Todd Lehman, Brittany Evans

**Email address and phone number of person(s) completing this report:**

- Todd Lehman: tlehman@clearintentions.glass, (303) 993-8221
- Brittany Evans: bevans@clearintentions.glass, (303) 993-8221

We wish to thank the RREO Grant Committee for this opportunity to establish a hub-and-spoke recycling system dedicated to glass throughout Colorado, which provides new and expanded glass recycling options to communities looking to increase landfill diversion rates.

Sincerely,  
Clear Intentions LLC

Brittany Evans, President and CEO



## I. ORGANIZATION INFORMATION

Please refer to the cover letter.

## II. WORK PLAN

<b>Deliverable</b>	<b>Completion Date</b>	<b>Comments</b> <i>(if deliverable was not completed, please explain why and what progress has been made)</i>
Establish 10 permanent drop-off bins	2/20/2015	
Establish 14 moving drop-off locations	1/23/2015	
Implement My Glass Valet program	12/18/2015	
Outreach and education of drop-off bins and My Glass Valet program	12/1/2015	
Conditional Use Permit Approval	3/3/2015	
Cullet processing line installed with hopper, separators, crushers, storage, and vibrating fluid bed dryer	-	Sorting line completed 3/20/2015, which decontaminates and color-separates collected glass to be diverted to bottle manufacturers.  Cullet processing line scheduled to be installed 11/2015 and operational by 3/2016.
Hire 2 FTE administrative	12/2014	
Hire 1 FTE processing manager	5/2015	
Hire 2 FTE processing technicians	2/2015	
Hire 2 additional FTE processing technicians	-	Due to permitting delays, our diversion rate has not provided enough glass to employ 2 additional FTE technicians. Scheduled to complete: 12/2015
Q4 2014 glass diverted – 900 tons	-	Due to permitting delays, this completion date is scheduled for Q4 2015.
Q1 2015 glass diverted – 1700 tons	-	Due to permitting delays, this completion date is scheduled for Q1 2016.
Q2 2015 glass diverted – 2400 tons	-	Due to permitting delays, this completion date is scheduled for Q2 2016.
Total glass diverted by end of grant cycle – 5000 tons	-	Due to permitting delays, this completion date is scheduled for Q3 2016.



### III. PROJECT SUMMARY

#### 1. Executive Summary

The Clear Intentions Hub-and-Spoke Glass Recycling Project has gotten off to a great start in Colorado. The RREO grant has enabled Clear Intentions to begin construction of a dedicated glass processing facility in Denver, CO to be used for collecting consumer and commercial glass from across Colorado for the purposes of recycling glass material into new products.

After unanticipated delays in securing warehouse space, due to the introduction of legal marijuana operations in January 2014, and in the lengthy permitting process in Adams County, Colorado, we finally began installation of recycling equipment in February of 2015, and began accepting glass deliveries in March of 2015.

The installation of our sorting line, phase 1, is now complete and is currently providing much needed recycled glass material to local bottle manufacturers. The vibrating fluid bed dryer, which was purchased with award funds, has been delivered to the site and is prepped for installation during the next phase of operations, which is scheduled to begin installation November 2015.

Our efforts are ongoing in providing outreach and working with municipalities, counties and commercial entities across Colorado to establish dedicated glass recycling. Many haulers across the state are happy to now offer glass recycling as a service to their clients, effectively expanding glass recycling to new territories.

Our Glass Valet program also began servicing Denver area bars, restaurants, hotels, and event centers at the beginning of the year, and is growing steadily. Working in conjunction with haulers and cities, we are actively pursuing new glass drop-off locations throughout Colorado, as well as the introduction of Glass Valet throughout Colorado.

#### 2. Project Description & Overview of Work Completed

##### **Project Description:**

The project consists of developing a Hub-and-Spoke recycling system to offer dedicated glass recycling to communities in Colorado. Colorado has had no access to a dedicated glass processing and recycling facility, and only limited commercial and drop-off recycling available. Through the grant award, Clear Intentions constructed a glass processing facility to serve as a “hub” location where recyclable glass materials will be delivered, staged, decontaminated, color-sorted, and then transported to local end-markets.

Acting as the “spokes,” the project also includes working with municipalities, counties and other entities across the state to offer dedicated glass collection, promote the program, provide education about the value of glass recycling and facilitate



participation. Further, Clear Intentions' goals included working with commercial and other entities to promote commercial dedicated glass recycling and to provide additional drop-off locations.

### **Overview of Work Completed:**

The glass processing facility received its Conditional Use Permit to begin operations on March 3, 2015. The property is 1.5 acres with a 12,000 square foot warehouse for glass processing. It includes 1-27' wide bunker for the delivery and staging of consumer glass, 1-21' wide bunker for delivery and staging of commercial glass, 2-9' wide and 2-21' wide outgoing bunkers for shipments of processed recycled glass to end-markets.

Our completed sorting line is a combination of 1 feed-hopper, 2 conveyors, 1 magnet, and 1 trommel for the express purposes removing contaminants from glass such as trash, paper, plastic, aluminum, **pyrex, ceramics**, and other materials. The final conveyor is a manual sort conveyor with 9 chutes leading down to containers for contaminant removal and color-separation.

### **Glass Diversion:**

This project has diverted a total of **78.63 tons of glass** from the landfill over the past 5 months.

At this time, we are working with 4 glass suppliers (hauling companies) across Colorado, and are in negotiations with 4 additional who wish to expand their services to include glass recycling. We should expect to see increased diversion rates in the coming months.

We have also been in contact and are working out negotiations between various cities along the Front Range, including Fort Collins, Longmont, Brighton, Breckenridge, Broomfield, Lakewood, and Pueblo. Proposals are being put together for increased glass drop-off locations, as well as the expansion of Glass Valet to local businesses.

Our Glass Valet Program currently has 30 clients, with 26 looking to sign contracts shortly. These clients include Union Station, Denver International Airport, Red Rocks, the Coliseum, and others.

### **Increased Recycling Marketing:**

As part of our outreach efforts, we have secured a cover article in the Denver Westword magazine highlighting the problems of glass recycling in Colorado, and particularly with single stream. Between in-print and online reach, we estimate its reach at 1.5 million residents along the Front Range. Our glass recycling efforts have also



been recognized in other local magazines, as well as CBS Denver, which have increased awareness of glass recycling and how residents, businesses and communities can get involved.

Publications include:

- Unite4:Good (Nationwide in Barnes & Noble, Books-A-Million)
- The Denver Westword (Cover article)
- CBS Denver (Glass recycling and single-stream)
- Waste-Dive (Glass recycling and single stream)
- The Rooster magazine
- Radio: stations 101.5 and 107.1 (1min spots playing till Dec 2015)

### 3. Summary of Results

Based on the work completed, we have seen numerous environmental and economic benefits to our project.

Since our project focuses on source separation, and decontaminates glass material as it comes to our facility, we have seen a 100% glass diversion rate. **None of the glass this project has received has been sent to the landfill.** Recovering a total of 70 tons of glass thus far, we have saved the equivalent of:

- 2,940 kWh of energy
- 350 gallons of oil
- 50 Million BTUs of energy
- 140 cubic yards of landfill space
- 525 pounds of air pollutants being released.

Economically, we have seen a reduction in expenses for local businesses. By using our program they are able to reduce expenses paid to waste hauling.

Overall, we have received an overwhelmingly positive response to our project from the community. Many businesses are excited to begin recycling glass with us, and we are bringing them on board as we can.

### 4. Summary of Unanticipated Outcomes or Roadblocks

As previously stated, unanticipated roadblocks for this project include Colorado's legalization of marijuana operations, which lead to the unprecedented drop in warehouse vacancy rates in Denver and surrounding counties early 2014. Real Estate estimates show a near 99% occupancy rate throughout the year, leading to a longer



than expected search for adequate warehouse space. Securing a proper facility took 9 months.

Our second unanticipated outcome was the lengthy permitting process for Adams County. Once we secured property which was properly zoned for “glass processing”, the Adams County Planning Department would not allow us to begin installation of equipment before a Conditional Use Permit was approved. Furthermore this permit was contingent on several factors outside of our control, including previous drainage plans for the property, which was argued by the Planning Department to not have been properly approved decades earlier, as well as the county’s determination of Clear Intentions as a “recycler.” This process set us back an additional 5 months.

We have since met with the County Board of Commissioners and Administration to improve and streamline their permitting processes to allow start-up companies leeway to begin operations while simultaneously submitting and reviewing the proper permitting requirements. Throughout this process, we refined our negotiations with potential clients and suppliers to ensure we began operations in a timely fashion immediately following approval for the Conditional Use Permit.

## **5. Communication of Project Findings**

Our project from the start has been focused on communicating glass recycling and its benefits to the community. This has included consistent social media marketing, together with publications in news media outlets, blogs, radio stations, and in-person events to communicate our project findings.

In the future we plan to continue our current marketing efforts, as well as to participate in local cause-branding campaigns with non-profits and breweries to take our findings into new markets and territories.

## **6. Future Impact of the Project**

We anticipate this project will greatly impact future waste diversion efforts for Colorado in terms of direct glass recycling, as well as indirect recycling for all other materials as glass is progressively removed from single-stream recycling systems. With removal of glass from single-stream, local MRFs will benefit from less wear-and-tear on equipment, effectively extending facility life, and will also benefit from higher quality materials being recovered for end-markets.

This project shows that source-separated glass recycling is capable of success and is beneficial to the entire recycling community in Colorado. This knowledge can



potentially be replicated, so long as the proper tools are in place and the proper awareness and marketing is implemented.



## 7. Financial Summary

Description	Grant Funds Spent	Matching/In Kind Amount (if any)	Total Amount
Personnel Salaries	\$0.00	\$0.00	\$0.00
Fringe Benefits	\$0.00	\$0.00	\$0.00
Tuition/Fees	\$0.00	\$0.00	\$0.00
Travel Costs	\$0.00	\$0.00	\$0.00
Materials/Supplies/Equipment(under \$5000)	\$0.00	\$3,427.00	\$3,427.00
Equipment Purchases (over \$5000)	\$250,000.00	\$281,313.00	\$531,313.00
Contractors/Subcontractors	\$0.00	\$51,634.00	\$51,634.00
Consultants	\$0.00	\$0.00	\$0.00
Training/Education	\$0.00	\$0.00	\$0.00
Marketing/Advertising	\$0.00	\$59,593.00	\$59,593.00
Other Direct Costs	\$0.00	\$0.00	\$0.00
Indirect Costs	\$0.00	\$0.00	\$0.00
Total Project Cost:	\$250,000.00	\$395,967.00	\$645,967.00

## 8. Conclusion

We are extremely pleased with the progress made with our facility, and with the positive impact this processing facility will have on the glass recycling market for Colorado. We have made significant progress in our outreach and marketing efforts, are encouraged by the receptivity of community leaders and businesses across the state, and expect to see the project continue to grow over the coming months and years. The RREO grant program was an important resource for this project and a key factor in expanding glass recycling capabilities across the state. We wish to thank you for this opportunity and appreciate the benefits this program brings to the state of Colorado.

## 9. Appendix

- a. Grant Metrics Table
- b. Community Leader Contact Information
- c. Manuals, Brochures, Print Advertisements, Pictures, Educational Materials, etc. Label each as its own appendix.

- Facility Pictures
- Denver Westword Glass Recycling Article
- CBS Denver Article
- Recommendation letter from Rocky Mountain Bottling Company



# Grant Metrics Table

Date project fully operational (if applicable):    
 Based on deliverables. Provide the month during which the grant project increased diversion/created jobs/increased number of customers.

100% of diverted materials has been sent to end-use bottle manufacturers to create new glass bottles.   
 End use of diverted materials:   
 Describe where materials are going (e.g. MRP, new products, reuse)

Material Diverted #1		<input type="text" value="Glasses"/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15		14.66	
February-15		12.75	
March-15		12.49	
April-15		9.54	
May-15		29.19	
June-15			
Total		78.63	0

Material Diverted #2		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

Material Diverted #3		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

Material Diverted #4		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

Material Diverted #5		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

Material Diverted #6		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

Material Diverted #7		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

Material Diverted #8		<input type="text" value=""/>	Tons Diverted
"Other" Material:		<input type="text" value=""/>	
July-14			
August-14			
September-14			
October-14			
November-14			
December-14			
January-15			
February-15			
March-15			
April-15			
May-15			
June-15			
Total		0	0

100% of diverted materials has been sent to end-use bottle manufacturers to create new glass bottles.   
 End use of diverted materials:   
 Describe where materials are going (e.g. MRP, new products, reuse)

Number of Permanent Jobs Created:   
 Include full-time & part time paid positions.   
 FTE = 40 Hours Per Week

Type of Permanent Job(s) Created:   
 Provide titles of jobs created

President, Marketing Director, Executive Assistant/Account Manager, Account Manager, Operations Manager

Average Salaries of Jobs Created:   
 Average of all jobs created

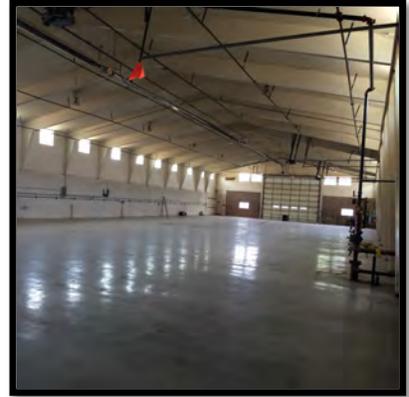
Avg. Monthly Amount	
July-14	0
August-14	0
September-14	0
October-14	0
November-14	0
December-14	3
January-15	4
February-15	6
March-15	15
April-15	24
May-15	25
June-15	25
April / FY 15	8

Average Monthly Customers:   
 Estimate or refer to customer list

## COMMUNITY LEADER CONTACT INFORMATION

1. **Mark Diggins**, Plant Manager, Rocky Mountain Bottling Co/MillerCoors, (303) 425-7919
2. **Brandy Dietz**, General Manager, Colorado Industrial recycling, (719) 492-1971,  
brandy@coloradoindustrialrecycling.com
3. **Geoff Davis**, Plant Manager, Datasafe of Colorado, (303) 255-6553, geoff.davis@nmetro.org
4. **Janet Burgesser**, Program Manager, Denver Certifiably Green, (720) 865-5457,  
Janet.Burgesser@denvergov.org





Facility located and secured at 5601 Downing St, Denver CO 80216



Photo-shoot from the Denver Westword Article to promote glass recycling across Colorado.



Installation of sorting line equipment from former RREO recipient March 2015.

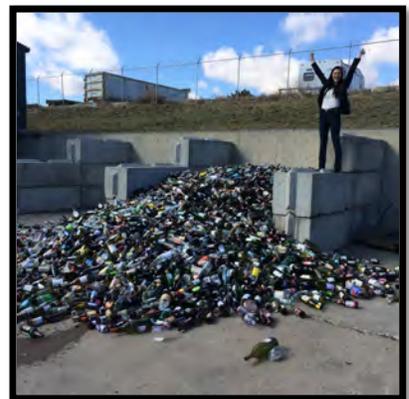




Final installation of sorting line and installation of truck scale.



Delivery of Vibrating Fluid Bed Dryer to Clear Intentions.



Diverted glass from landfills filling up Clear Intentions carts across Denver.



# Westword



**BREAKING  
BAD**

**BY MELANIE ASMAR**

**THE GLASS THAT YOU THROW IN YOUR RECYCLING BIN  
MAY NOT END UP WHERE YOU THINK IT DOES.**

Glass is infinitely recyclable, so it's easy to imagine that the bottles and jars you put out at the curb every week are headed off to be melted down and remade — baby-food jar into baby-food jar, beer bottle into beer bottle, forever and ever, amen. But not in Denver, or in many other Colorado communities with single-stream recycling, where everything from paper to plastic to glass is thrown into the same bin. Instead of being endlessly recycled, the glass that Denver residents put in their purple bins is reused only once, as a liner for landfills.

Surprised? That's understandable. The city doesn't draw attention to the fact — and hasn't since [it became the first place in Colorado to switch to single-stream recycling in 2005](#), in an effort to get more residents to participate. "Single-stream itself is a very positive thing," says Eric Heyboer of the Colorado Department of Public Health and Environment. "When you make it really convenient for people to recycle, they will recycle more."

But convenience on one end creates more work on the other. The stuff that's collected in the single-stream process must be sorted so that the paper, plastic and aluminum can go their separate ways. While the workers and machines at recycling facilities can separate the junk mail from the yogurt tubs and pop cans, they have a harder time picking out the glass.

That's because it's broken. Between your curb and the recycling center, glass is jostled, dumped and smashed numerous times. By the end of the sorting process, it looks like recycling confetti: broken glass mixed with shreds of paper, bottle caps and other tiny detritus.

At Colorado's biggest recycling facility, which is located in Denver and owned by a private company called Waste Management, that confetti is transported to landfills, where it's used in place of sand or gravel to line trash pits. The glass acts as a filter for the liquid that seeps out of the decomposing garbage, allowing the liquid to be collected and processed so that it doesn't contaminate the groundwater. It's known as a "beneficial reuse," and the upside is that it saves natural resources from being used instead. The downside is that the glass is only reused once.

Every piece of glass that is recycled in the city's single-stream ends up as landfill liner

So how much glass is that? Waste Management won't say how many cities or counties in Colorado it contracts with, but company officials report that its Denver facility ends up with 25,200 tons of beneficial-reuse glass each year. In 2014, more than 20 percent of that — or 5,500 tons — came from the city of Denver, where it's estimated that glass makes up 16 percent of the recycling stream.

In other words, every piece of glass that is recycled in the city's single-stream ends up as landfill liner.

Those facts recently inspired two companies to try to improve the way that Denver — and the rest of Colorado — recycles its glass. [Momentum Recycling](#), out of Utah, is building a facility that will use high-tech optical sorters to clean the shards of single-stream glass so they can be recycled into new glass instead of being used in landfills. [Clear Intentions](#), based in Denver, has its own facility where it sorts glass that it collects separately from bars and restaurants through its Glass Valet program. That glass is also recycled into new glass.

"I cannot say how excited I am that these two companies have come to Colorado," says Marjorie Griek, executive director of the Colorado Association for Recycling, a nonprofit organization that promotes recycling. "Glass has been a difficult issue for many years."



The glass at Colorado's biggest single-stream recycling facility is so broken and contaminated that it can only be used as landfill liner (file photo).

Anthony Camera

Glass isn't the only problem. Although Colorado is known for its green image, state recycling statistics tell a different story.

Colorado's "diversion rate," which is the amount of waste that's diverted from landfills through recycling and composting, is just 23 percent, according to the CDPHE. The national rate is 34.5 percent, although experts agree that the way that Colorado calculates its rate differs from the way the federal Environmental Protection Agency figures the national rate.

A better comparison may be the numbers reported in a 2014 Columbia University study that surveyed all fifty states about how much waste they divert from their landfills. Colorado's answer put the state in the bottom half of the nation.

"We're pretty bad," Griek says. "It's really rather depressing."

There are several reasons for this dismal showing, experts say. One is geography. Colorado has plenty of vacant land on which to build landfills, which means that those landfills charge lower "tipping fees" to waste haulers to dump their trash than landfills in states where open land is scarce. When it's cheap to dump trash, municipalities and haulers have less financial incentive to offer recycling programs.

"We're pretty bad. It's really rather depressing."

Colorado is also unusual, says the CDPHE's Heyboer, "because we're such a big state, with pockets of population centers, and in those population centers you have the Boulders, the Tellurides and the Aspens of the world that are super-gung-ho about recycling and have a green image. And then you have the rest of Colorado, which is a little different."

For the rest of Colorado, recycling can be expensive. Most recycling facilities are located along the Front Range. It can be challenging for a far-flung trash hauler to collect enough empty pop cans to make it worthwhile to drive to Denver in order to take them to a recycling facility or sell them to an "end market" — the companies that take the used cans and turn them into new ones. "It eats into a lot of their profits," Heyboer says.

In an attempt to boost Colorado's recycling rate, state lawmakers created the Recycling Resources Economic Opportunity grant program in 2007. Heyboer is the administrator of the program, which is funded through tipping fees. Its primary purpose, he says, is to develop infrastructure that makes it easier to get recyclables to market. This year, RREO gave out eight grants totaling \$1.8 million. One of the grants, for \$202,000, was awarded to Momentum Recycling to help buy glass-processing equipment for its new plant. Clear Intentions received a \$250,000 grant last year for a similar purpose.

"What attracted us to Clear Intentions is that they're encouraging people to segregate glass from other recyclables," Heyboer says. When glass is mixed in with everything else, it not only makes it difficult to recycle the glass itself, but the tiny broken pieces contaminate other recyclables like plastic and paper. "It kind of makes the end markets a little cranky," Heyboer says. "They have to figure out how to separate the glass from the stuff they want."





Steve Derus of Momentum Recycling, which is building a facility that will use high-tech equipment to clean single-stream glass so it can be recycled.

*Anthony Camera*

The challenges of recycling single-stream glass are on full display at the state's biggest recycling facility, the Waste Management Franklin Street Materials Recovery Facility (MRF). Inside a dusty and noisy but surprisingly not too smelly Globeville warehouse in north Denver, a steady flow of crushed boxes, dented cans and crumpled paper speeds along the approximately five miles' worth of conveyor belts that snake through the plant.

Along the way, humans and machines pick through the material. They remove non-recyclables —

grocery bags, garden hoses — and separate the rest by type. An optical sorter scans some of it and uses air jets to blow plastic into a bin, while the rest continues down the line. A worker wearing a safety vest and hard hat flings milk jugs in one direction and paper in another. A reverse magnet repels aluminum cans, causing them to fly into a designated chute.

Much of the glass arrives already broken, and all of it ends up that way after bumping through the sorting equipment. Glass is also hard on the machinery, which causes additional problems for recycling facilities. "It's like little knives running across the equipment," Waste Management spokeswoman Melissa Kolwaite says.

At the very end of the line is a conveyor belt covered in beneficial-reuse glass. "This is what we're faced with," Kolwaite shouts over the whir of the machines. In addition to glass, the stuff rolling by includes beer-bottle stickers, the tops of cat-food cans, plastic forks, cassette tapes, the decapitated heads of coat hangers, cigarette butts and wrinkled coupons.

The MRF ends up with about 2,100 tons of beneficial-reuse glass each month, says plant manager Rich Conner. Nobody wants it, which is why the state has allowed Waste Management to use it as a replacement for gravel in the drainage layer of the trash "cells" at its landfills for more than five years. Before that, the company was using it in place of native soils as daily landfill cover — another example of a one-time reuse, Kolwaite says. "If it doesn't have an end market, there's nothing we can do with it."

But that could change in early 2016, when Momentum plans to open its state-of-the-art glass-processing facility inside an old lumber warehouse in Broomfield just off U.S. Highway 287. The company estimates that it will cost between \$7 million and \$8 million to build.

"I like to know that if I'm drinking a bottle of beer and I'm recycling it, it's going to become another bottle of beer."

Colorado is an ideal location, says Momentum's Colorado business manager, Steve Derus, because it's home to two

bottle-manufacturing plants: the Owens-Illinois facility in Windsor and the Rocky Mountain Bottle Company in Wheat Ridge, which is owned in part by MillerCoors. Those plants have the ability to take used glass, melt it down and make new bottles.

It actually takes less energy (read: money) to melt recycled glass than it does the virgin materials that glass is made of, which is why experts say the bottle companies would prefer to use it exclusively. The problem is that they can't get enough. Because single-stream recycling is so

popular, the majority of Colorado's used glass is contaminated — and you can't make a new bottle out of glass that's polluted with paper shreds and bottle caps. Only clean glass can be recycled, and clean glass is hard to come by. CDPHE statistics back up that assertion: About 1.9 million tons of material was recycled in Colorado in 2013, the most recent year for which statistics are available. But only 25,191 tons — about 1 percent — was glass.

Momentum plans to buy the dirty glass from single-stream MRFs and clean it up. To do that, it will use screens and magnets to filter out contaminants, along with sophisticated, expensive optical sorters to separate the glass shards by color. The optical sorters are made in Europe, and Derus says Momentum will be the only company in Colorado to have them. At the end of the process, the contaminated glass shards will look like clean, shiny beads.

The plant will be capable of processing up to 5,000 tons of glass a month, and will sell between 75 and 85 percent of it to the bottle manufacturers to make into new bottles. "That's true bottle-to-bottle recycling," Derus points out, "and that's endless."

Any pieces that are too small to be used in that way will be sold to companies that use the "fines," as they are called, in other ways, including adding them to road paint to make it reflective. The state grant will go toward buying equipment to process the super-tiny shards.

Once Momentum is up and running, the glass that's generated in Colorado can be collected and recycled in Colorado. And thanks to the state's hundreds of breweries, there's a good chance the glass will be used in Colorado, too, Derus says. "I like to know that if I'm drinking a bottle of beer and I'm recycling it, it's going to become another bottle of beer."



Damon Michaels, Brittany Evans, Todd Lehman and Tiffany Keen are the crew at Clear Intentions, which collects glass separately from bars and restaurants.

*Anthony Camera*

Clear Intentions is aiming even higher when it comes to bottle-to-bottle recycling. The company's goal is to turn 100 percent of the glass it collects into new glass, says president Brittany Evans.

Evans came to Colorado last summer from Utah. She started Clear Intentions while she was in college there; her dream was to create a "closed-loop" system that would take used products and make them into new ones without needing to mine any more virgin materials. Glass, she realized, was the best packaging material with which to do that.

"You can make a beer bottle for generations to come," she says.

But because of the issues with glass in the single-stream, Evans decided that the best way to accomplish her goal was to collect it separately, sort it and then sell it to bottle manufacturers like the ones in Colorado. She and her team of fellow twenty-somethings applied for a state RREO grant, and when they received it last year, they decided to make the move here.

Clear Intentions is headquartered in a Denver warehouse not far from the Waste Management Franklin Street MRF. The warehouse is set up like a mini-MRF that processes only glass, most of it from Clear Intentions' Glass Valet program. Bars and restaurants pay \$30 a month to have Clear Intentions collect their glass once or twice a week. A few dozen establishments, many of them in lower downtown, have signed on so far.

"It's super-easy on our end," remarks Geoff Brent, general manager at Summit Music Hall. In addition to being environmentally sound, Brent says, the program saves room in the venue's regular single-stream recycling bins. "There was no reason for us not to use it."

"We're recycling a lot of glass," says Derek Langford, general manager at Howl at the Moon. "We fill up five 64-gallon containers every weekend. It helps us feel good that we're not putting that glass into the landfill. Before we signed on with them, we were just putting all our trash in one container and dumping it into our bins. The only thing that got recycled was cardboard."

"We fill up five 64-gallon containers every weekend. It helps us feel good we're not putting that glass into the landfill."

Not that the idea of recycling glass by itself is new. Just ask Frank Rodrick, who owns #1 Recycling in Arvada. He's been collecting glass from bars and restaurants in the metro area for free for 25 years and making money by selling it to Rocky Mountain Bottle Company. "No one else was really doing glass," he says. "I became the glass king, so to speak."

Unlike the new companies, which have websites and marketing strategies, Rodrick operates quietly: He's a family businessman who advertises in the phone book and got most of his nearly 300 customers through word of mouth. He says he currently collects up to 200 tons of glass per month, which is more than Clear Intentions does.

But the Clear Intentions crew has lofty goals. The company hopes to eventually expand the Glass Valet program to municipalities with recycling drop-off centers, individual neighborhoods and beer festivals. The idea is to process several thousand tons of glass per month.

Because Clear Intentions is still just a five-person operation, marketing director Todd Lehman and accounts and events manager Damon Michaels double as the company's glass collectors. On Mondays and Fridays, they fire up an old orange truck that they bought on the cheap in California from a dry-cleaning company. They load it with empty maroon recycling bins stamped with the Clear Intentions logo and drive it through narrow graffitied alleys, swapping the empty bins for full ones and taking care to maneuver around line cooks on their smoke breaks.

Behind the Wynkoop Brewing Company, a cook in black chef pants and clogs approaches them as they drag the restaurant's full bins to their truck. He tells them he's happy the Wynkoop is recycling its glass separately.

"That's what's up," he says.



In this file photo, recycling trucks unload at the Waste Management Franklin Street MRF in Denver.

*Anthony Camera*

More communities are beginning to recognize that glass in the single-stream is problematic, says Colorado Association for Recycling's Griek. Summit County recently banned it for that reason, asking residents to take their glass to county recycling drop-off centers instead. Some cities, including Fort Collins and Loveland, allow glass in the single-stream bins but also provide separate glass-only containers at drop-off centers.

Denver doesn't operate any glass drop-off centers, but a few private organizations do. Jobs for Thy Neighbor is a faith-based nonprofit that currently partners with four Denver churches, including Our Savior's Lutheran Church in Capitol Hill, to place glass-only containers at their locations. Anyone can drop off their glass, and Jobs for Thy Neighbor contracts with #1 Recycling to pick it up to be recycled, says executive director Reverend Tina Yankee.

"There's really been no downside from our end of the business."

And despite the problems, Denver doesn't have any plans to change. Rather, the city is banking on technology improvements, such as Momentum's high-tech optical sorters, to ensure that Denver's used glass gets recycled, says Charlotte Pitt, operations manager for Denver Recycles, the division of the city's Department of Public Works that runs the recycling program.

Pitt believes that Denver's single-stream recycling program has been a success. The city has been recycling since 1991, and when it switched to single-stream in 2005, participation skyrocketed, going from 40 percent of households to 75 percent, she says. In addition, the amount of material collected continues to rise every year. In 2014, Denver collected 34,350 tons of recyclables.

"There's really been no downside from our end of the business," Pitt says. "We collect more material and we have more people participating." But, she adds, "we're not blind to the fact that there's a whole other industry once it leaves our hands."

## 'Clear Intentions' Recycling Company Working To Tackle The Glass Mountains Of Colorado



(credit: Todd Lehman, Clear Intentions)

**DENVER (CBS4)** – Nestled between a junkyard and bounce-house manufacturer on a hill overlooking the city of Denver, is Colorado's first, and only, solution to specifically glass recycling.

I know, I know — you thought glass already *was* recycled, along with other materials. As it turns out, only 17% of Denver's recycled glass actually gets recycled. That's 1 out of 6 bottles, a rate that places Colorado as 49th out of all states in the country.

The glass that does get recycled becomes a product made of 50% glass, the rest a mix of other discarded materials. While glass has the potential to be a renewable resource, this mixture will go to Colorado landfills as trash, accumulating to 12,000 tons a month.

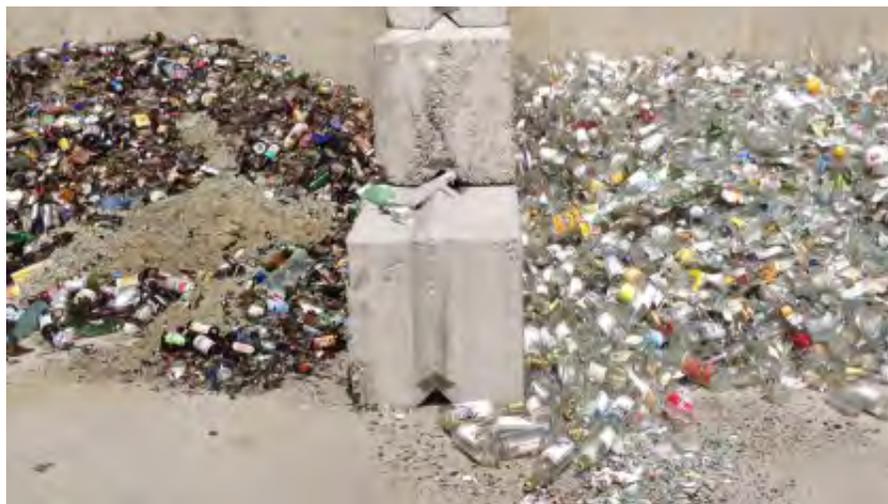
How can that be? Well, the large compactors that collect trash and recycling smash all that material in order to gather as much as possible. Glass cannot withstand the compactors and crushes into irretrievable pieces, no longer capable of being recycled.

This is why "source separation" is key. Separating materials from the beginning can have

a huge impact on recycling potential, particularly for glass. Plastic and paper can be sorted after collection, but glass gets crushed into useless bits.

[Clear Intentions](#) is making this potential a reality in Denver and greater Colorado. The company, begun as a college project by Brittany Evans, seeks to fully recycle every piece of glass that comes their way by acting as a waste management service.

Brittany is joined by Todd Lehman, Damon Michaels, and Tiffany Keen, who together work with bars, clubs, restaurants and hotels in Denver to collect their mountainous glass waste.



(credit: CBS)

With the help of the second-largest grant in the state from Colorado Department of Public Health and Environment, the close-knit team of four was able to establish a true recycling facility about a year ago.

Finding a warehouse was harder than you'd think, because Clear Intentions came on the scene just as marijuana was being legalized, an industry that scooped up many available warehouses.

The team finally found one, bought a massive sorting machine, CAT tractor and heat blaster with their quarter-million dollar grant, and set to work.

Though some have to be convinced about recycling, let alone source separation, Clear Intentions is welcomed by what may seem like competitors. Single stream recycling — where all recyclable materials are disposed of together — damages machines that aren't

made for glass, creating constant need for expensive repairs. Other waste management companies want the separation.

From bars and restaurants to Union Station, Clear Intentions does an assessment of the glass waste their client produces then provides the location with several 64-gallon carts. A weekly pickup takes all that glass to the warehouse, where the team of four processes it.



Glass recycling carts (credit: CBS)

Manufacturers want their recycled materials to be as clean as virgin resources, so Clear Intentions handpicks every piece that comes through. Their trucks dump tons of glass bottles in the outside bunkers, loads which are then transported to the assembly line with the use of that CAT. The team stands 15 feet off the ground, sorting trash from glass, colored from clear, and large pieces from small into their appropriate chutes.

The processing line, by the way, is also a recycled material. Clear Intentions bought the machine from a company in Evergreen going out of business, thus giving it a second life.



Processing line (credit: CBS)

Materials that can't go to bottling companies find another use. There's a 1-ton crate in the warehouse full of aluminum cans that somehow snuck into the bins at bars and restaurants. The team collects the cans so they can be turned in to the appropriate waste management.

Blue glass, unwanted by bottling companies (except Bud Light) because of the chemical compound needed for the color, is highly desired by artists.

The finished product is just as pure a resource as virgin glass, but without the excessive energy required to make it. Every metric ton of new glass created releases 700 lbs. of carbon dioxide as extreme heat is used to transform raw materials. By recycling existing glass, less energy is used and therefore less CO<sup>2</sup> released.

Clear Intentions currently sells their impeccably sorted glass to manufacturers who crush the old materials and metamorphose it into a new product: bottling companies want the large pieces and fiberglass companies want the finely ground sand.



Finely ground sand; collected bottles awaiting sorting (credit: CBS)

They're also breaking into the public with neighborhood drop-off bins — like the kind used for clothes collection. The stations will be placed near grocery stores, parks, and liquor stores, available for the whole community to use. Local nonprofits will be in charge of alerting Clear Intentions when the bin needs to be collected, and for doing so will receive a donation from the company.

An [IndieGoGo campaign](#) is helping to fund these community bins, which can also be obtained by an individual. If you as a neighbor would like to host a glass recycling crate for your residential community, it's free to do so, plus you gain some neighborly bonding.



Todd branding their community collection bins (credit: CBS)

As a group of young people entering the old industry of waste management, the four wanted to make it fun.

"One thing that bothers the heck out of me is that recycling companies don't brand it or make it look cool," Todd said. He's beautifying those community drop-off bins with paint and stickers, to give Clear Intentions an image.

In addition, the industrial company hungry to recycle glass products has taken on a Steampunk theme, and not just behind doors. They host socials, considering a majority of their clients are bars, and dress up accordingly for any tabling event. They've been to a [TEDx conference](#), bar socials, and brew fests, all great opportunities to meet people and find more who may be interested.

At Denver's Winter Brew Fest, Clear Intentions collected nearly 1 ton of glass, just from two nights. They'll be at the Summer Brew Fest on July 24, doing what they do best.



The team behind Clear Intentions (credit: CBS)

Though difficult to work directly with the city, which has its own recycling, Clear Intentions has become part of Denver's 'Certifiably Green' certification, a sustainability initiative that recognizes companies for doing their part. Recycling glass waste through Clear Intentions is now one of those electives.

Clear Intentions is focusing on recruiting all the bars, restaurants, and hotels in the Denver area as recycling clients. These companies produce a huge percentage of glass waste, which could have another life if properly recycled.

They're also working with Union Station, the city of Grand Junction, now neighborhoods, and more in the making.

Clear Intentions understands that glass, though an unexceptional part of everyday life, has enormous potential to be a truly renewable resource. And that's exciting.

*CBS4 social media and website producer Heather Sadusky writes about trending topics on social media and across the Internet on her [What's Trending Blog](#). Share a story idea with Heather by [clicking here](#).*

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Date July 10, 2015

Mark Diggins  
Recycling Technician  
MillerCoors/Rocky Mountain Bottle Co.  
10619 W. 50<sup>th</sup> Ave.  
Wheat Ridge, Colorado 80033

To Whom it may Concern,

On behalf of MillerCoors/Rocky Mountain Bottle, I am writing enthusiastically to support Clear Intentions and their opportunities in glass recycling. This new company is bringing a new creative spin to glass recycling that is revolutionary.

Recycling has become so important in so many industries and a key part of our operation in the manufacturing of glass. The glass that is collected from this facility is already separated, so 100% of the containers are assured to be recycled and stay out of the landfill. Whereas with other methods of collection i.e. – single stream, much of the material becomes contaminated and is unusable and ends up being hauled off as rubbish. Currently Rocky Mountain Bottle recycles around 80,000 tons of glass a year, which is equivalent to about 20% of our glass content. Unfortunately, Colorado is ranked one of the lowest states when it comes to recycling at 11%, and local glass recycling cannot meet our demands. Only 50% of the glass we recycle comes from local sources. A good portion of the recycled glass is shipped here from deposit states at a premium price and railed across the country. We, however, would like to increase the recycled content in our glass to 70 – 80% which could be as high as 250,000 tons of recycled glass annually.

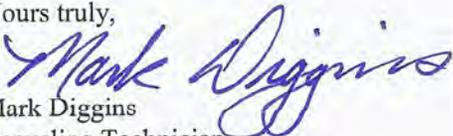
Glass is endlessly recyclable with no loss in purity or quality. Every bottle recycled saves energy, in fact, recycling 1 glass bottle or jar saves enough energy to power a TV for 1 ½ hours, a computer for 25 minutes or a 15w light bulb for 24 hours. Also, the glass itself produces no CO2 emissions, thus reducing the carbon footprint for every ton of glass recycled by 315 kg of carbon dioxide.

Clear Intentions is a leader in glass recycling with new innovative programs. As we go forward our appetite for recycled glass continues, especially the sustainability of local recycled glass. Building a relationship with Clear Intentions has been a crucial step in the success of our facility. As recycling programs pick up speed, the public has an appetite to do the right thing and recycle--Clear Intentions provides a channel for this resource.

I encourage your to support Clear Intentions – it will truly make an immediate and significant difference for our business and for our customers.

If you have any questions or need additional information, please don't hesitate to call me.

Yours truly,

  
Mark Diggins  
Recycling Technician

MillerCoors/Rocky Mountain Bottle Co., 10619 W. 50th Ave. Wheat Ridge, CO 80033 303-425-7919 Desk, 720-612-8590

## Grant Metrics Table

Date project fully operational (if applicable):

Based on deliverables. Provide the month during which the grant project increased diversion/created jobs/increased number of customers.

**Diversion Rates:**

Choose one material per blue box from the drop-down menu provided. If your material is not listed, enter a description in the "Other" box.  
Only list materials diverted as a direct result of the grant project. Must be listed in tons. See tab labeled "Conversion Tables" if needed.

Material Diverted #1	<input type="text" value="Glass"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	14.66
March-15	12.75
April-15	12.49
May-15	9.54
June-15	29.19
<b>Total</b>	<b>78.63</b>

Material Diverted #2	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

Material Diverted #3	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

Material Diverted #4	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

Material Diverted #5	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

Material Diverted #6	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

Material Diverted #7	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

Material Diverted #8	<input type="text"/>
"Other" Material:	<input type="text"/>
Tons Diverted	
July-14	
August-14	
September-14	
October-14	
November-14	
December-14	
January-15	
February-15	
March-15	
April-15	
May-15	
June-15	
<b>Total</b>	<b>0</b>

End use of diverted materials:  
Describe where materials are going  
(e.g. MRF, new products, reuse)

100% of diverted materials has been sent to end-use bottle manufacturers to create new glass bottles.

Number of Permanent Jobs Created:  
Include full-time & part time paid positions.  
1 FTE = 40 Hours Per Week

Type of Permanent Job(s) Created:  
Provide titles of jobs created

President, Marketing Director, Executive Assistant/Account Manager, Account Manager, Operations Manager

Average Salaries of Jobs Created:  
Average of all jobs created

Average Monthly Customers:  
Estimate or refer to customer list

	Avg. Monthly Amount
July-14	0
August-14	0
September-14	0
October-14	0
November-14	0
December-14	3
January-15	4
February-15	6
March-15	15
April-15	23
May-15	24
June-15	25
<b>Avg / FY 15</b>	<b>8</b>