

Laramie Glass Recycling Forum
19 November 2013

Convened by the UW Campus Sustainability Committee

and co-sponsored by

UW Extension, the Haub School of Environment and Natural Resources, Big Hollow Food Co-op, and the Wyoming Union

Meeting Summary

Purpose

The purpose of the Laramie Glass Recycling Forum was to provide information on the history of glass recycling in Laramie including reasons why it ended, and to generate ideas for how to provide glass recycling in the future. The first half of the forum was dedicated to information sharing by recycling leaders and experts, and the second half was an opportunity for public input. The facilitated meeting was attended by 109 individuals.

Background by panelists

Bill Vance, Ark Regional Services

Until November, 2013, Ark Regional Services collected and recycled glass in Laramie and surrounding communities through six drop-off stations. The Ark is a non-profit organization dedicated to placing their clients in jobs. The Ark ended its glass recycling initiative because it was losing money for the organization, primarily due to the cost of transporting glass to Miller-Coors in Wheatridge, CO, where it was recycled into bottles. On average, the Ark collected 19 tons of glass per month, and lost \$10,000 - 15,000 per year due to subsidizing glass recycling. The Ark is considering reorganization to better align with their mission. As a result, they may reduce or stop their recycling program in the future.

Brooks Webb, City of Laramie Solid Waste Manager

The City of Laramie has a single-stream recycling program, in which city residents can place all of their recyclable materials, excluding glass, into a single bin. When the City initiated the curbside recycling program, glass was excluded because it contaminates the stream when the recyclables are crushed for transport, and because the Ark was still taking glass. The Solid Waste division of the City is a break-even enterprise paid for by fees and there is not currently funding for the City to recycle glass.

Tod Scott, University of Wyoming Custodial Service Manager

Glass recyclables from UW were formerly taken to the Ark for processing and transport to Colorado. As a result, UW has also suspended its glass recycling program. UW pays for its recycling program through student fees since the sale of recycling commodities is not sufficient to cover the program costs. UW cannot justify an increase in student fees to cover the costs of

recycling glass. If the City or another entity were to reinstitute glass recycling, UW would like to participate.

Steve Dures, Senior Recycling and Organics Manager, Waste Management of Colorado

The City of Laramie contracts with Waste Management (WM) to run the single-stream recycling program. Glass is excluded from the single stream because it contaminates other materials, is expensive to transport, and reduces the rebate from other materials. WM does recycle glass from single stream recycling programs and glass-specific bins in other communities. Currently, glass from single-stream recycling programs is crushed for use as alternative daily cover in landfills in lieu of virgin sand or as a drainage layer in new landfills. WM is considering purchasing an optical sorter so that glass cullet (broken glass) from single-stream recycling can be used for bottle production. Glass collected in separate bins for glass only can be transported directly to Miller-Coors to be melted and turned back into bottles. The rebate on glass separated into clear and colored is about \$50/ton, while the rebate on mixed clear, brown, green, and blue glass is \$20/ton.

Mark Diggins and Ryan Schneider – Miller-Coors Rocky Mountain Bottle Company in Wheatridge, CO

Miller-Coors accepts recycled glass for production of new bottles. Currently, their colored bottle production uses approximately 70% raw material and 30% recycled material. Clear glass production uses 8% recycled materials. The company would like to increase the proportion of recycled material in their bottles and divert more bottle waste from landfills. Impediments to that process are getting a sufficient quantity of recycled glass with minimal contamination. Beverage delivery trucks are not equipped to return to Colorado with recycled glass because of the difference between food-grade versus waste-handling vehicles/trailers.

Suggestions from the audience on glass recycling in Laramie (unranked)

Reuse

- Use crushed glass in concrete (work with Mountain Cement in Laramie)
- Use as aggregate in asphalt or roadbase
- Uses at Laramie landfill
 - Use crushed glass as alternative daily cover in lieu of sand and other materials
 - Stockpile and use a drainage layer for the next pit to be constructed at the landfill

Recycling

- City of Laramie takes over glass recycling by shipping glass to the Colorado Front Range
- Transportation options
 - Use beverage delivery trucks to transport recycled glass back to Colorado markets, including beverage companies
 - Contract with a backhaul trucking operation to take glass to Colorado in empty delivery trucks
 - Transport recycled glass to market using the railroad. Options for collection include:
 - Renting a rail car to receive and haul recycled glass

- Storing glass material in a bunker until a critical mass is reached and then shipping the glass by rail once or twice a year (to reduce rail car rental costs)

Funding options

- Increase City of Laramie recycling fees to cover costs of collecting and transporting glass to a glass recycling facility (consider making glass recycling mandatory if recycling fees are increased)
- Fund recycling collection and transportation costs with private sponsorship for recycling bins. Businesses and private donors could be recognized with a magnet on the recycling bin.
- Institute a voluntary fee on the City of Laramie utility bill to fund glass recycling
- Charge more money to dump trash at the landfill, with lower fees for recyclable materials.
- Advance a bottle bill that would provide rebates for returned bottles

Next Steps

A show of hands indicated strong audience support for participation in a subsequent forum on glass recycling. The Campus Sustainability Committee will produce a meeting summary for use by stakeholders and decision-makers. Currently, a small committee of City of Laramie employees (including the Solid Waste Manager, Public Works Director, and the Finance Department Director) is drafting recommendations on glass recycling for consideration by the City Manager, and ultimately, by Laramie City Council. That report is to be completed in December.

Detailed Meeting Minutes

Introduction

Milt Geiger, UW Extension Educator – Welcome to this public forum on the future of glass recycling in Laramie. Tonight we'll hear from glass recycling experts on why glass recycling in Laramie has ended and what opportunities exist to reinstitute glass recycling again. We'll also solicit input from the audience on ideas for making glass recycling feasible in Laramie again. The results from tonight's discussion will be shared with stakeholders and decision makers.

The facilitator tonight will be Elizabeth Spaulding, Public Policy Mediator at the Ruckelshaus Institute of Environment and Natural Resources. We will hear 5-10 minutes from each panelist and then take clarifying questions from the audience after each presentation. Then we'll have an open forum with feedback from the audience.

Bill Vance, Ark Regional Services

History of the Ark – started in 1985 with aluminum cans, then newspaper. In 1991, we received a grant from the railroad to purchase a bailer and we expanded to other communities in SE Wyoming. We process materials and ship them to mills. In the last few years, recycling has dropped off and the prices of commodities have gone down. We lose money on glass.

As a non-profit, we have to get out of the glass business. We used to ship our glass to Coors in Wheatridge, CO. On average for the last six years, we have shipped 19 tons/month. They use 210 tons a day. In Wyoming, we don't generate enough glass to do much with it.

[Provided some numbers on glass recycling.] Glass is accepted from a number of communities, but most of the Ark's glass is generated from Laramie.

Questions:

- Is that a colored flow or is that just brown, clear, or green for instance?
 - We keep it separated because Coors paid more money for brown and green. If mixed, then with shipping cost, it wouldn't pay back.
- How many truck loads is 19 tons a month?
 - About $\frac{1}{2}$ or $\frac{3}{4}$ a truck (50,000 lbs on a truck)
- Losing \$35/ton, so losing \$700/month, is that right?
 - That's a conservative figure. We lose \$10-15K/year on glass.
- What's your major expense on processing?
 - Freight costs. If we could get away from shipping it, that might cover the expenses associated with it.

Brooks Webb, City of Laramie Solid Waste Manager

Currently, the City doesn't do recycling in their glass recycling containers because the glass contaminates the rest of the single stream. Recycling goes into a packer truck. Gets dumped on

the ground and the compacted for payload. That compaction process breaks the glass down, getting into the fibers of the paper and cardboard, ruining the rest of the single stream. When we started doing the single stream recycling program, we didn't do glass since the Ark was already doing that.

We're looking for options with Waste Management for glass. The City has a small group – Brooks, the public works director, and the finance department director, to look at options for the future. Options will go to the City Manager and the City Council to make a ruling.

Glass is a loser money-wise. The solid waste division is a stand-alone one. Operations are covered strictly through fees. The \$4+ fees/month covers the cost each month. We break even on that. We keep the material out of the landfill. To haul glass out of town costs money. We have to see how/if that would affect fees and how to fairly appropriate that. There may be a small user group for recycling. Is it fair to spread that cost?

Other options – local municipal uses (asphalt or roadbase) since the major cost of glass recycling is transportation.

Questions:

- Can you estimate what % of glass in landfill – past and now?
 - I don't know since glass came in with the trash truck. Assume now that the majority of the Ark's glass is going to the landfill.
- Expand on use in aggregate? Long-term storage should be inexpensive.
 - The Streets Division is working on that. I don't know the technicalities. On the surface, that might be one of the most cost efficient things. Storage wouldn't be an issue with 260 tons of glass.
- Cost per ton of landfill storage?
 - \$53/ton is the gate fee. It's a break-even operation.
- We're losing \$35/ton and we're paying \$53/ton?
 - Yes, we'll put a valuation on the space of the landfill.
- What about taking glass to Cheyenne or Fort Collins. Has that been explored?
 - As far as the City, we're looking at all options right now. That may be one of the options. I know the City of Cheyenne and City of Fort Collins have glass recycling programs.
- You spoke of putting price on the space. How much does a cubic yard of glass weigh?
 - About 1500 pounds
- Have you contacted the Union Pacific railroad to use a car as a collection point?
 - The City has not talked with them. It would take a year to fill up the rail car.
- What are the options for those in the county to recycle glass?
 - That's one of the options we'll be looking at. It goes back to whether the city is doing a fee-based project. It would be hard to do something for the county since the city doesn't have a way to charge county residents. I don't know that we would have an option for the county if the solution is fee-based. If we can use it locally and it's not fee-based, then the county residents could participate.

Tod Scott, UW Custodial Service Manager

UW recycling partners closely with Ark Recycling as one of the communities that work with them. We primarily collect recycling materials from on campus. We do have some public drop-off places. We were formally collecting glass but we've suspended those pick ups. We just transport our materials to the Ark so our transportation costs are smaller than the Ark. UW Recycling is subsidized through student fees. We don't make enough from the commodities we sell. We couldn't afford to ship glass ourselves and we couldn't justify increasing student fees to pay for that. We collected about 15 tons of glass last fiscal year. It's a significant amount but not compared to the Ark and what the city would take.

Questions:

- Is there any plan for UW to work with the City?
 - Certainly, if the city does take glass, we could too. We do have a partnership with the city now for the few things the Ark doesn't take (press board and higher numbered plastics). They don't pay us for it but they take it and thus keep it out of the landfill.

Steve Dures, Senior Recycling and Organics Manager, Waste Management, Colorado

I've been working with the City of Laramie to develop their curbside recycling program. We did not include glass in the single stream since we could use the Ark, and for contamination reasons. Glass is a dense material in the stream. To transport that to Denver and not have a use for it when combined in the single stream, didn't make sense. Also get a higher rebate when single stream doesn't have glass. We currently process about 10,000 tons of single stream material, some of which has glass in it. Some of the stream is contaminated and some of the uses of that glass -- we have a state approved beneficial use in landfill instead of virgin sand. Also used it for alternative daily cover (difference between a dump and a landfill). We are currently looking into partnering with a third party that would separate the glass optically. So we're looking at cleaning our single stream glass to a quality that could go back into a bottle. The glass that other places like Fort Collins collect -- we have separate glass containers. That can be hauled to Miller-Coors and turned right back into a bottle. Transportation costs are tremendous. Our round trip from your landfill is 263 miles at \$100/hour or per/ton or per/load costs. The state of Colorado has collected a landfill tipping fee and subsidized transport of glass to a glass user (expired on July 1). So we in Colorado also have a dilemma -- how to get the rebate that Rocky Mountain was paying.

We do have a landfill under construction in Ault -- using cullet for the drainage layer. Colorado has looked into using glass in aggregates -- long approval process in transportation. Want material to have the best longevity. If it's not engineered properly, glass may decrease the life of the asphalt.

We have looked into rail haul at various locations (BNSF).

Questions:

- Is there a difference in price between virgin sand and crushed glass?
 - Yes, but it depends on how far you're hauling glass or gravel from quarry. It varies per construction project.
 - \$15/ton for sand in new landfill. Glass would not pencil out.
- What volume do you use in landfill for lining and cover?
 - Much larger scale. Our facility produces a glass cullet (2000 tons/month). We use 100% of that in our new landfills. But that's just for now. As the landfill goes up, no more liner or drainage layers needed. We have looked into alternative uses. State of Colorado has awarded grants for looking at alternative uses (e.g., tire shred and glass cullet used in seep systems for home septic systems) but those volumes are really limited.
- Define what you mean by single stream and main causes of contamination?
 - On top of the container, you can see what goes into single stream recycling – a list of acceptable items. In this community, we don't accept glass into single stream. In other communities, we do accept glass in single stream but those are older contracts. We believed 10-15 years ago that single stream was a way to get more people to recycle to make it easier than separating at the curb.

Mark Diggins and Ryan Schneider – Miller-Coors in Wheatridge, CO

We're a bottling company and we support our product. But as a responsible company we don't want to make a product that ends up in the landfill. It's not as simple as just recycling glass. Getting it from point A to point B, melting it down, and making bottles – there's a lot of involved. Want to see all those bottles produced recovered, melted down, and put back into bottles again.

Currently, we use 70% raw material, mostly made of sand, and 30% recycled material. Eventually, we want to use 70% recycled glass and only 30% raw material. When you put a pound of glass into the melting process, you get a pound of glass out. We don't get that much efficiency from raw material. It's hard for us to be able to put any glass into our furnaces if it's contaminated. So we wanted the opportunity to learn what we as a company can do. We want to hear ideas. Raw materials are cheaper for us than to get glass shipped out to us because there's not enough volume.

Questions:

- You have trucks to haul beer up here, what are you hauling back to CO?
 - Usually hauling empty trailers or packaging materials back. The set-up of a trailer to hold pallets with bottles compared with the setup for hauling glass, is a different trailer use.
- The clear glass – is there a way to dope that?
 - Up to 2 years ago, we took brown glass with three furnaces. Now, we have a clear glass furnace (Miller bottles). For flint, we're buying per ton more, only putting

8% recycled clear glass into the furnace – the rest is 92% raw material. In a clear bottle, can only have about 1% contamination.

- What is the price difference between raw materials and recycled ones?
 - Don't have figures on that. Commodity price for glass is \$50/ton if separated, \$20/ton if mixed.
- What about states that have bottle fees – 10cents/bottle? Bottles go back to breweries?
 - Colorado does not have a bottle bill right now.
- What is your suggestion for getting empty bottles back to the plant?
 - The problem with transportation is common to other companies. It's the difference between hauling a food product versus waste.
 - Right now what we're using is train cars and trucks. These are mom and pop operations going around to recover and profit from glass delivery. Our ideas.... Bringing education to the public – what can be recycled with respect to glass. When it is contaminated, we can't get a workable recycled glass. Then we have to landfill it or suffer consequences of defects in glass.
- If somebody from Laramie was to bring you separated glass, you would pay \$50/ton for it?
 - Yes
- And if that glass were separated into clear and everything else, would it still be \$50/ton?
 - Can accept some amount of color contamination. With amber that's about 20% (with blue, green, and clear). With clear glass, can only tolerate 5% contamination.
 - (Steve Dures). If all mixed together, the standard rebate is \$25/ton. If it's separated by color ("gramber"), that's in the \$50 range. If clear only, that's in the \$50 range also. So facilities we operate as public drop-offs, you hand separate or you have 2-3 different containers to get increased values to offset those costs.
- Has Coors explored going back to deposit return bottle system?
 - Yes. As far as a bottle bill – that's basically asking for a company to put more money on a product in a shrinking market.
- For Steve, what happens with our single stream recycling in Laramie?
 - It's very clean, limited contamination/residue. We see that in new programs, in the first 2-3 years. Most of the older programs have about 10% contamination that goes to the landfill. The material that you're recycling here gets reused. Milk bottles are made into more milk bottles. Cardboard back to cardboard. Aluminum back to aluminum cans. Those commodity costs make it profitable for us. Plastics made into carpet fibers, jackets, synthetic materials for clothing, synthetic woods for decks (plastic lumber).
- The extra 15% of raw materials versus a recycled material.... Difficult to calculate cost.... But how does that relate to the end cost of bottles.
 - Reference to 15% effusion loss? 15% of that raw material is lost in the process of making glass. So how does that affect cost? I don't know. Will ask at the plant.
 - Steve Dures: when we have recycled glass, the user has to process that glass themselves and clean it up.
 - Ryan Schneider: In terms of raw materials in a batch... it's a formula amount of weight to produce glass. One batch is about 3 tons that goes in. 125 batches for each 12 hour shift.)

- So when we send them recycled glass that isn't furnace ready, that contamination... they risk losing that whole batch.
 - We'd like to go back to bottle to bottle but it doesn't meet the specifications to be furnace ready. Very expensive to put in an optic sorter to clean up the glass.
 - Public drop offs for public to sort by color create glass for reuse with minimal processing. The price that they rebate us for glass is a price that offsets the difference in the cost between using new sand compared with energy needs for melting a glass bottle into a recycled bottle.
 - Ryan Schneider – when contaminants get into our process, we aren't making bottles.
- Bill Vance - The city of Boulder spent \$1.5M on a glass separating system, so it's an expensive proposition.
- It seems like this a lot of economy of scale. As Laramie's consumption is only about 16 tons/month, are there any models in smaller communities – reducing consumption is one idea. On the recycling end, are there similar communities doing something that's working for them at this scale?
 - Steve Dures – WM has operations in Steamboat Springs, but lots of beer bottles there. We have public drop-offs. We've talked to Brooks about options in transportation. In Steamboat Springs, a trucker brings tires to steamboat springs, gets recycling in return. Do it in gaylords (a cubic yard box). So no problem with contaminating food-grade trailers. There are options that smaller communities use to cut the transportation costs in half. Unfortunately, everything from WM out of Laramie is full. Could be businesses with back-haul operations going to Denver or the Front Range empty. This is a spoke-and-hub operation.

Public forum on options

[Below are questions and comments from audience members, with responses from panelists.]

- We have a concrete plant – can we use glass in manufacturing concrete?
 - Brooks – The City streets division is talking about this. We don't know what kind of process it would be. No solid answer yet.
- What is the volume of 35 tons of glass that gets crushed?
 - Steve Dures – Average end dump is a semi truck. Holds 30-40 yards of materials. Would hold 20-22 tons of crushed glass per load. A smaller dump truck, that's about a 10-15 yard capacity that could hold 10 tons of crushed glass. So you're looking at about 1 truckload/month.
- Was the number of glass recycling points when we were at our max – enough to make it a feasible program? It doesn't seem like bars/restaurants have been participating.
 - We had 6 collection sites and a lot of the bars contributed but we were only getting glass. So we were driving around collecting glass that was costing us money.
- Using the numbers from Ark, losing about \$10K a year on glass?

- That's our best estimate. Gaylord boxes are \$22/box. But the glass ruins the box. Holds about \$10 worth of glass. We're losing \$10-15K/year.
- Has there been discussion with the City to increase recycling fee to cover those costs?
 - Brooks – that's one of the options we're looking at. The problem is in applying the proper fee to the actual users. So if we increase 50 cents/month increase to 8000 customers and only 30 customers use glass bins, is that fair? We have to discuss that.
- What percentage of Laramie glass is being brought to collection facilities and what is being thrown out?
 - Brooks – I don't know how that could be quantified. We don't know how much is being used.
- Is that obtainable knowledge?
 - Bill Vance – someone would have to dig through trash. I don't know how we would get those numbers.
 - Steve Dures – there are published studies on how much on average is recycled/used, etc.
- I'm not clear on why it's so undesirable to have a rail car sitting around for a year.
 - I've heard that we don't have a rail spur for that and that someone would be paying for that sitting there.
 - Mark – as far as rail spurs go, if you don't have access to the rail facility, then you have expenses in hauling the glass to the rail spur, plus the cost of leasing the car. We're talking about UP and BNSF – they charge each other to use each other's rails. Sounds like it would be very expensive.
 - Brooks – we'll look at the option.
 - Bill – we're at less than 19 tons a month. Doesn't make sense to invest that kind of money.
- It sounds like we need to be drinking more beer in Laramie. Has Laramie's recycling program made the Ark less profitable?
 - Bill Vance: yes at the collection bins a little bit. Aluminum and steel didn't have as much in them. Before, those probably offset the costs of glass. It did affect us some.
- We don't know what percentage of Laramie's population was contributing to recycling at the Ark so we don't how much glass there would be if everyone were required to recycle it, right?
 - Yes
 - So we could be generating 50 tons/month, with college students?
- Instead of having a rail car sit there all year, just bring it in once or twice a year.
 - Steve - A rail car holds about 100 tons. You could have a bunker, even outside, filled with glass. When you have a 20-ton load, you could use a loader and a dump truck and haul that to Rocky Mountain bottling. We do that for Larimer Co. We do that for Cheyenne. So yes, could get a rail car for a day or two.
- Construction of the new landfill, if it's still under construction, use some crushed glass for underlayment.
 - Brooks – the drainage layer at the Laramie new pit is done. We could work with DEQ to use it as alternative daily cover. Yes, there are a few landfill uses for glass.

- Glass is inert so could be stored for a few years without needing a liner. Stockpile crushed glass until you have to build the next landfill, and then use it for the next landfill to be built in Laramie.
 - Steve – your landfill has a synthetic liner. When using glass it goes on 3' of compacted clay – don't have to worry about penetrating plastic, but not so if using a liner.
 - Brooks – there are plenty of uses at the landfill, but is that the best use for recycled glass?
- We actually do have two railroad spurs in Laramie (one is downtown, one is south of town). If we added a surtax for recycling glass to the utility bill, everybody in town is already paying for the landfill and ultimately if that fills up with glass, all of us will have to pay for a new pit and liner down the road. When might we get a report from the City about your ideas and what you've come up with?
 - Brooks – regarding a surcharge on the utility bill – the finance department will work it out to try to hit the right users. Nobody outside city limits gets utility bills and some inside city limits don't get utility bills. That will be one of the options. We have about 3 ½ weeks left to have a report ready for the city manager.
- If it costs \$53/ton to put things in the landfill and \$35/ton to transport. Is this a fairness question? Isn't the city just subsidizing landfilling? If I'm recycling glass, I'm costing the city less.
 - Brooks – yes, the people who are putting stuff in the landfill are paying for it.
- Wasn't that a point that was sold to us when we started single stream recycling?
 - Yes
- When you analyze how much that user fee would cost, I hope you consider making glass recycling mandatory.
- Back to utility bill charge, with respect to fairness and finding the right users, but wouldn't it be fair to the entire community of Laramie, if the community is required to recycle glass to keep it out of the landfill.
 - Sure, it would benefit the entire Albany Co. The problem is, we don't have the ability to charge everybody in Albany Co. that fee. That could be tacked on at the landfill and not the utility fee.
- Why is it *unfair* to charge the entire city? It would be a small fee.
 - Yes, it would be a small fee.
 - Bill Vance - it's hard to make absolutely everything fair. Bars generate a lot more glass than a household ever will.
 - Brooks – one of the options is how does that space saving at the landfill favor everybody. I get what you're saying. There's a process to creating a fee. This group loves the idea of glass recycling. But if we raise recycling fees by 5 cents, some people will be upset about it.
- Observation – caution not to put the cart before the horse. The question is what are the viable options, rather than how we fund it yet. We are not Colorado. We will never produce the same amount they do. A lot of the options brought up here are not viable here.
- I've worked at the Evanston recycling center – they ship their glass recycling to Salt Lake City. They make up the money by a donation process. Community members and

businesses donate money and then have a promotional magnet on the recycling bins. It's a non-profit organization like the Ark.

- Brooks – a City government isn't going to put out a donation jar, we have to account everything. It would have to be a private organization.
- Bill – the Ark is willing to take any donations. The Ark is not just a recycling operation. We have over 100 clients and our basic focus is getting jobs for them. We have created a business to give the clients a job and that shouldn't be the Ark's focus.
- There was a donation program by my city in Kentucky on the utility bill – an optional donation – it went to green power initiatives (solar panels) – the same thing could be applied here. People could vote with their wallets.
- At the animal shelter, various municipalities have used a similar approach for supporting animal shelters elsewhere.
 - Brooks – I think that type of program could work.
- Those of us who live in the county, we get ticket packets to take to the dump (buy from the city). Is there a way we could do something like that? Is there a way to have tickets in lieu of a donation on their utility bill.
 - Brooks – I'm not sure what tickets you're talking about. But if you're purchasing from the city, that could be tacked on. Just need a receipt and accountability for it.
- I live in the county, what are our options for living out in the county? How do we bring county people into the whole recycling system?
 - Contact the county commissioners. They will make any policy decisions for the county. They have a vested interest in what happens to the landfill out there. That special purpose tax was city and county money. The county has a vested interest in it.
- For the Ark, regarding the cost of the boxes.... Have you looked at a more durable, plastic containers? And are the transportation costs bid out?
 - Started getting containers from Dooley Oil – containers used for hydraulic fluids.
 - We had a good price for transportation -- \$600/freight from here to Wheatridge and back is a good price.
- What's the quality of our cullet?
 - Really good job keeping it source separated. About half of the truck was full of cullet and the other half was full bottles.
- Do you (Brooks) get to weigh in on when these decision are made about what this fee looks like? People will always complain with respect to fees. Can get on the city council's website and email them and tell them what you think. Amount of glass we put in the landfill will cost us more? Do you (Brooks) get to weigh in on this? (Our recycling program is really good.)
 - Brooks – basically we've got a group together that's working on this. We'll come up with staff recommendations that will be ranked. From there, the city council will adopt, alter recommendations or add a new one. I will have input up until the recommendations are complete.
- Question for Bill – this whole thing revolves around transportation and you're not that far off from the rebate covering the costs. You send the glass in end dumps? Yes. However it needs to be crushed.
 - Bill - We got 50,000 pounds on a truck

- Last year, what was the progress toward reaching the goal of 40% diversion rate to the landfill?
 - Brooks – that’s over a 20 year period. We don’t have good numbers right now. Putting a scale out there will help. Right now we do it based on a survey and “guestimations.” We need to get the numbers from everyone who’s recycling – e.g., scrap dealers. There is stuff coming from the city, county, and beyond. To find the true diversion rate from Laramie will take some time. Even Walmart takes cardboard out their back door. To get at the true diversion rate means looking at everyone who is recycling within the city of Laramie. Private businesses don’t always want to divulge that info. The state is working on some legislation that will require municipalities (and even businesses) to report on their recycling rate. I can tell you that in the 2 years since I’ve been here, the city’s diversion has gone up. With the single stream program, etc. We’re stockpiling inert materials to crush later. There’s a lot more diversion going on now than there was 4-5 years ago. Getting the single stream program was intended to divert waste and that’s true. The current cell would be full without those diversion programs that are ongoing. The diversion programs have been effective. We have numbers on what the city (and some businesses) have recycled.
- Miller-Coors, are there any organizations or entities that are helping communities address this on a broader level so they continue to use glass and not an alternative?
 - No clear answer but the company is helping communities to recycle. We have worked with small recycling places to be more flexible on what they can bring into us.
- Will there be an opportunity for public comment on your recommendations after you write them?
 - At every city council meeting there is opportunity for public comment.
- For Bill Vance, if your cost were covered, would Ark still be interested in covering recycling for glass?
 - Unfortunately, things are changing fast with our operation. So Ark may not be in the recycling business much longer.
- So if the city took over the process, the cost may not be what we’re thinking?
 - Brooks, yes right, if the Ark isn’t doing it, we’re looking at a larger cost.
- After the landfill is done, what efforts will there be to promote recycling in general?
 - Brooks - At the landfill now, part of the construction is a recycling depot, more accessible, to drop off metal, tires, etc. It’s all going to be centrally located and easier. At that same location, we’ll have bins for single stream stuff. So that will be right near the entrance. Users will have to go past that before getting to the trash – that will promote recycling. There may be some rate changes in that if you’re bringing recycle material in, it’s cheaper than if it’s trash.
- If taking a load to the landfill now, are single stream items charged at same rate as tip fee?
 - Brooks – everything coming in is charged at one rate. City Council endorsed that recycling containers can be offered to businesses. It’s optional. About 50 businesses have signed up. I’m not sure why businesses weren’t rolled into the original ordinance. A lot of businesses we can’t service with the single stream. We can’t get our trucks into some of the downtown allies. We have to go to the

business and see if we can even service it. There have been a couple that we can't get to. That's probably why we didn't make it mandatory. But the trucks we use to pick up refuse at businesses are different than those we use for single stream.

- Miller-Coors: There are some examples of what we have done to support communities in glass recycling – orchard festival in Westminster, provide a donation for glass recycling. Provides funding for the festival and promotes good information. We have a drop-off site located near the festival. That's an example of community-based programs.

Interested in contributing to future community dialogue? Yes, most hands up.

Thanks to panelists.

Meeting summary will provided at the UW Campus Sustainability Committee website.