

Lindsey Walker

Market Development & Commercial Accounts



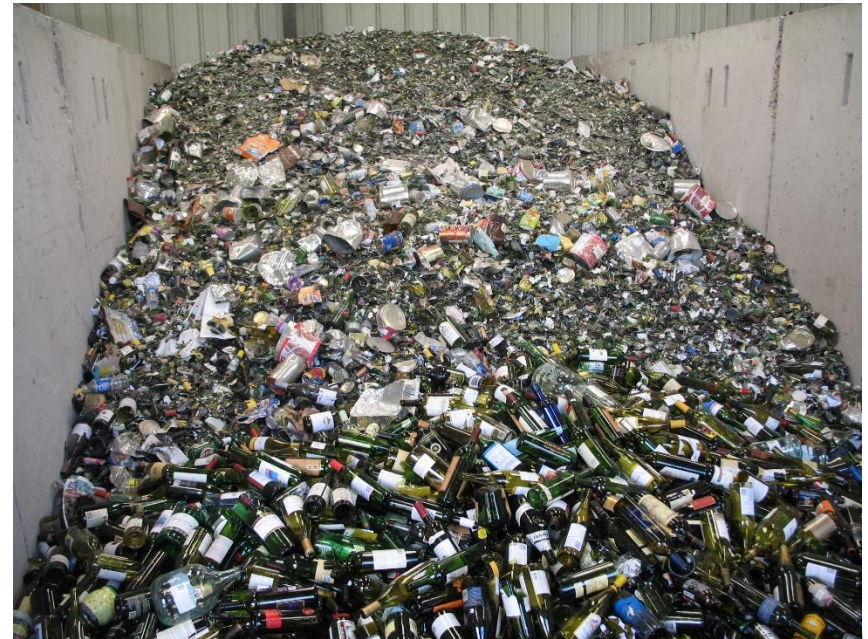
Recycling Glass bottles & jars since 1990

1990-2009 consumer source separated

**Source separated clear glass
bunker 2007**



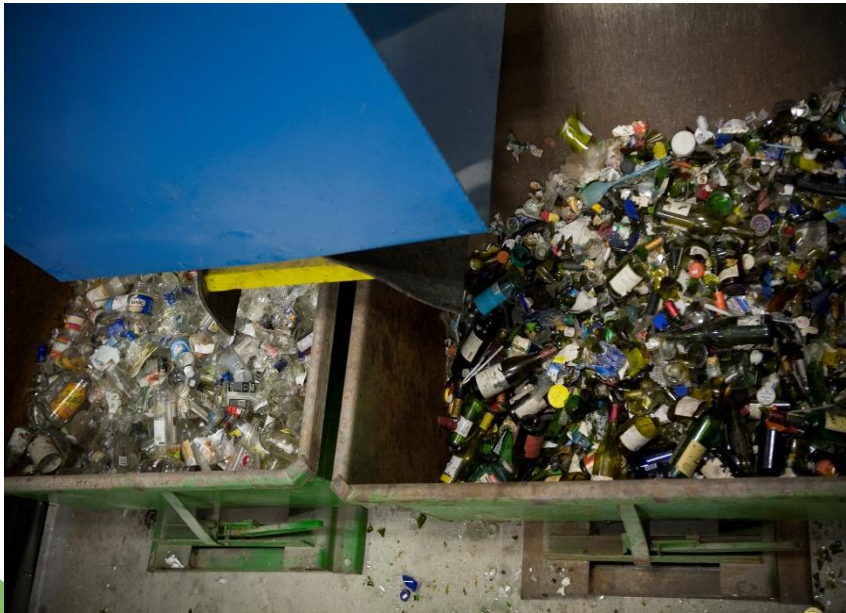
**Source separated colored
glass bunker 2007**



Dual Stream consumer co-mingled glass bottle recycling 2010- 2020

In dual-stream human sorters sort the clear glass from the colored glass

Clear is hand picked because of it's value, colored is untouched because it has no value



Dual Stream

STREAM #1: Papers, Boxes, & Bags

BAG YOUR BAGS

Stretchy Plastic Bags
bag your clean, dry bags

BAG SHREDDED PAPER

Mixed Paper
no fissue • no towels

Cardboard
flatten

All material must fit loosely with the lid fully closed.

Recycle this stream in your **ROLLING CART**



STREAM #2: Mixed Containers

Cartons & Paper Cups
empty, rinse & replace caps

Plastic Bottles & Containers
empty & replace tops

EMPTY AND RECYCLE

Metal Cans & Foil

Glass Bottles & Jars

Recycle this stream in **one or more GREEN TOTES**



Challenges to Clean (Glass) Commodities

- **Non-container plastics** lids, caps, straws, cutlery, anything under 2”
- **Ceramics** a big NO-NO for glass recycling end markets
- **Non-bottle glass** like Glass windows, tempered glass, pyrex etc...



2014- we lost our colored glass market, due to unforeseen end markets beyond our glass processor

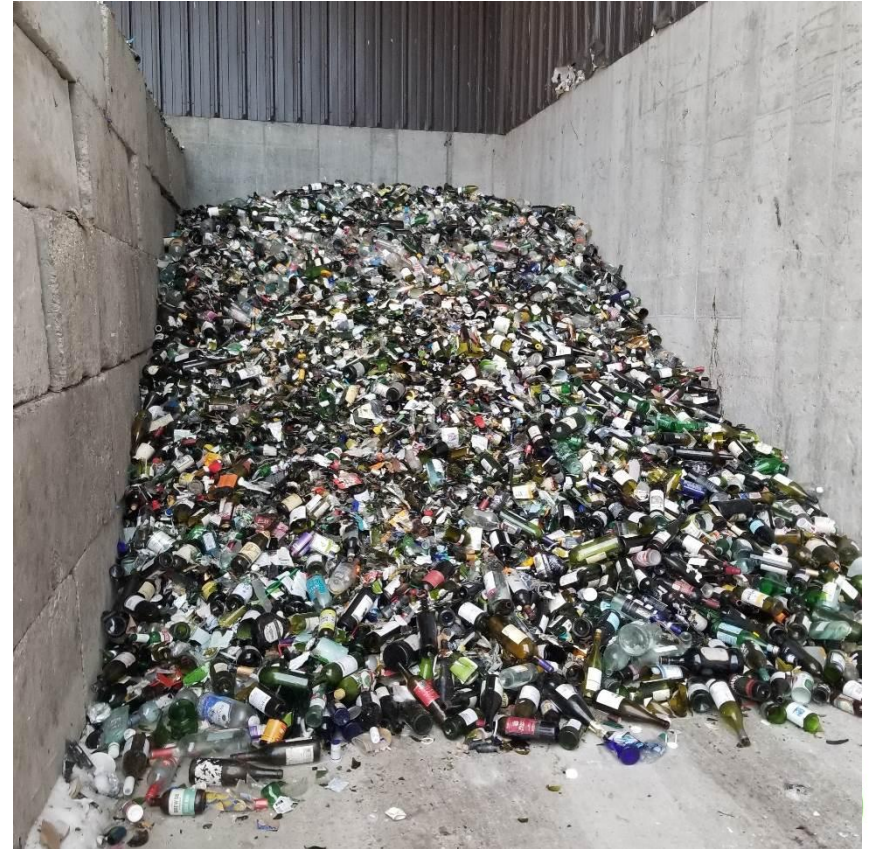


Loading our first load of colored glass out to Strategic Materials Inc, June 2015



June 2015 – October 2020

human sorted dual stream glass two end markets, clean PC MRF
glass



The three lessons of our
experience:

- 1) Seek out local markets
- 2) Build relationships
- 3) Provide good clean
commodities

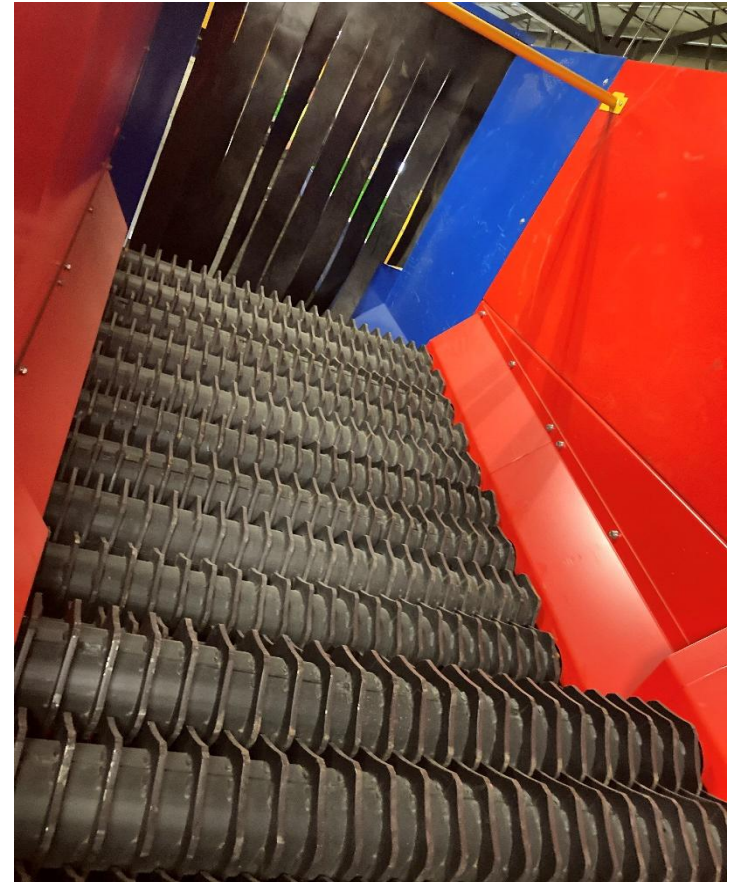


Local Markets, Win-Win

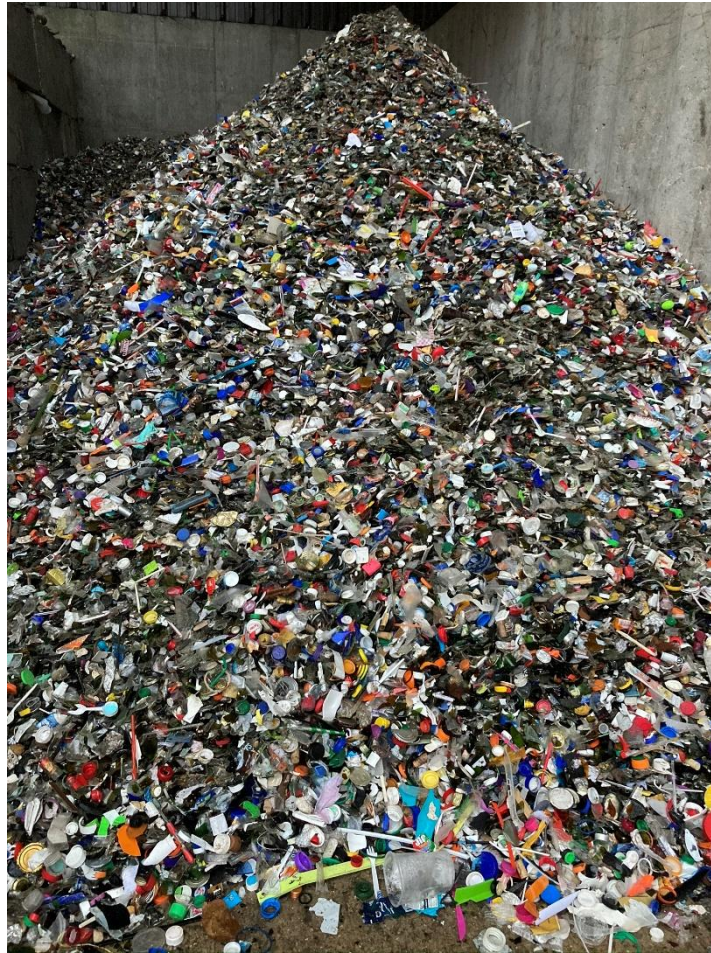
Improving processing & transportation efficiencies



Glass screens in-place, in front of Container line pre-sort to screen, break and conveyor glass out of facility



The first “run” of equipment sorting- photo
taken 10/29/20



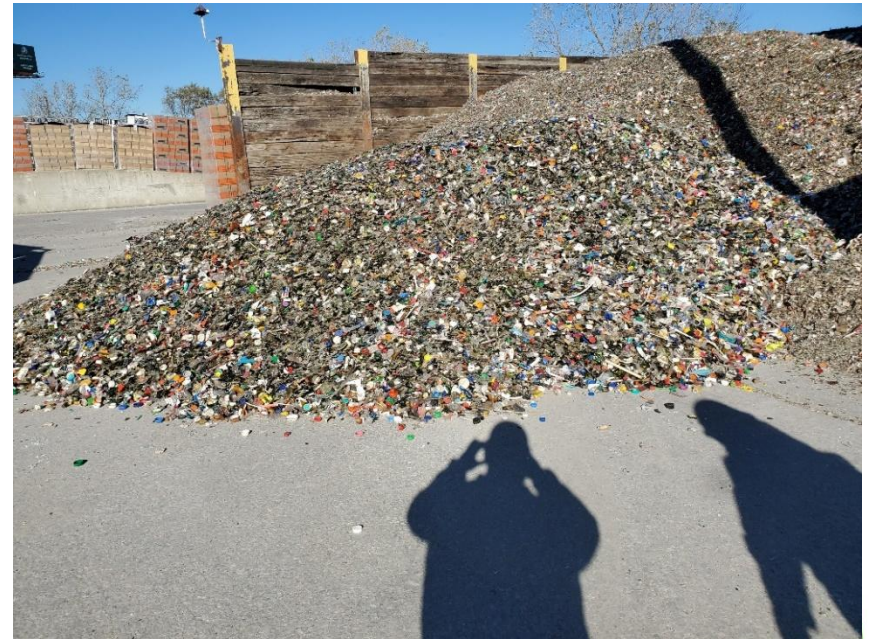
Compared to what our broker and end-market SMI was expecting from emmet county recycling



First load sent out to SMI 11/3/20- flagged

End market was like- what?

Clearly our material wasn't up to snuff- or what they were accustomed to receiving from us



The new comingled material didn't look great, but come to find out it was at least 95% glass

Emmet Glass Composition

This composition is based on a grab sample taken from the glass discharge pile 10/15/2020

An effort was made to capture a representative mix, but the process was not scientific.

SORT CATEGORY	WEIGHT (gm)	PERCENT
Flint Glass	2057	44.2%
Gramber Glass	1380	29.6%
Green Glass	536	11.5%
Amber Glass	263	5.6%
Sortable to Cullet		91.0%
Other Glass Colors	43	0.9%
Glass Fines >5/32≤3/8	196	4.2%
Approx. Percent Glass		96.1%
Small Fines ≤5/32	17	0.4%
Plastic Caps	40	0.9%
Other Rigid Plastics	48	1.0%
Metals	35	0.8%
Ceramics	14	0.3%
Other Stuff	27	0.6%
Total	4656	100%



So now where...

- We have shipped several loads to SMI in Chicago, since the first load on 11/3/20- and now that the end market knows what to expect they can tip and plan accordingly. \$28/ton, (\$63/ton), 360 mile distance
- We discussed with our MRF engineer other end market options for our comingled glass- Rumpke Dayton, Ohio is willing to do a few trail loads with us. No tip fee, not paying Trucking quotes \$70/ton, 460 mile distance
- Partnering with hub-n-spoke MRF for centralized glass collection & processing- Emterra MRF Lansing, MI. Economies of scale. 220 miles
- Piloting mobile- on-site glass clean-up, crushing and creation of PC recycled glass product. Beach glass? a finished landscaping or sand product. Partnering with a regional company like Renewable Infrastructure Solutions to pilot model uses for road construction and aggregate municipal infrastructure projects.



*Revisit the teaching/the lesson/the
mantra- and repeat...*

- 1) Seek out local markets
- 2) Build relationships
- 3) Provide good clean commodities
- 4) **Be persistent**





Recycle
for
Michigan!

