



Glass Recycling: *Opportunity*

National Recycling Coalition

July 31, 2018

Bill Clark | Regional Sourcing Development Manager

Strategic Materials Inc.

Agenda



- Who is Strategic Materials?
- Why Glass?
- Glass current status
- Glass Future

Strategic Materials

Markets Served

We are the largest glass recycler in North America, with nearly 50 plants.

With over 100 years of experience, we are a recycling market leader for glass and plastics.

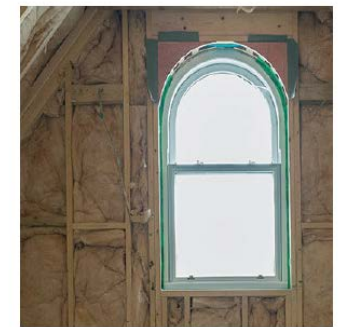
The markets we serve with our recycled glass helps to reduce manufacturing costs and improve sustainability.



Container



Abrasives



Fiberglass



Fillers



Highway Bead



Plastic



Specialty

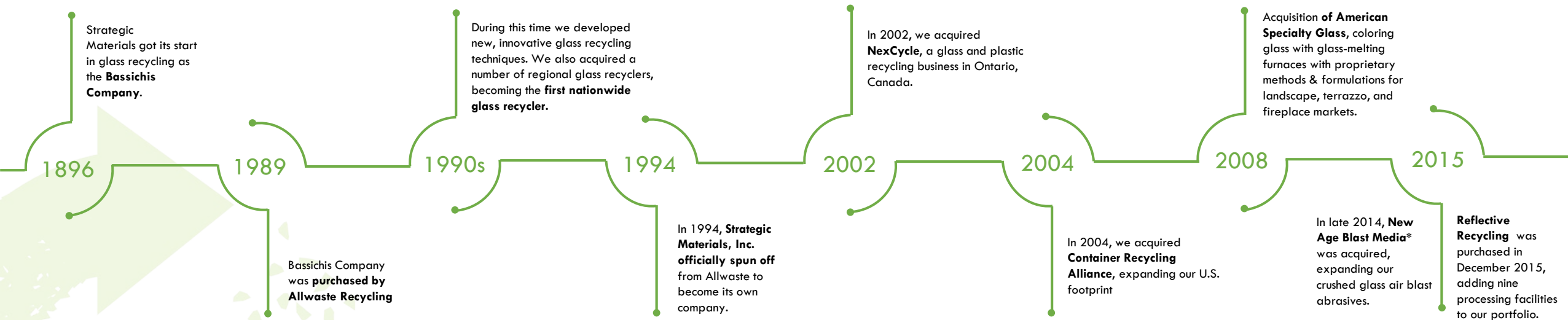
We recycle nearly **3 million tons of glass** a year into a variety of applications.

Strategic Materials

Our History

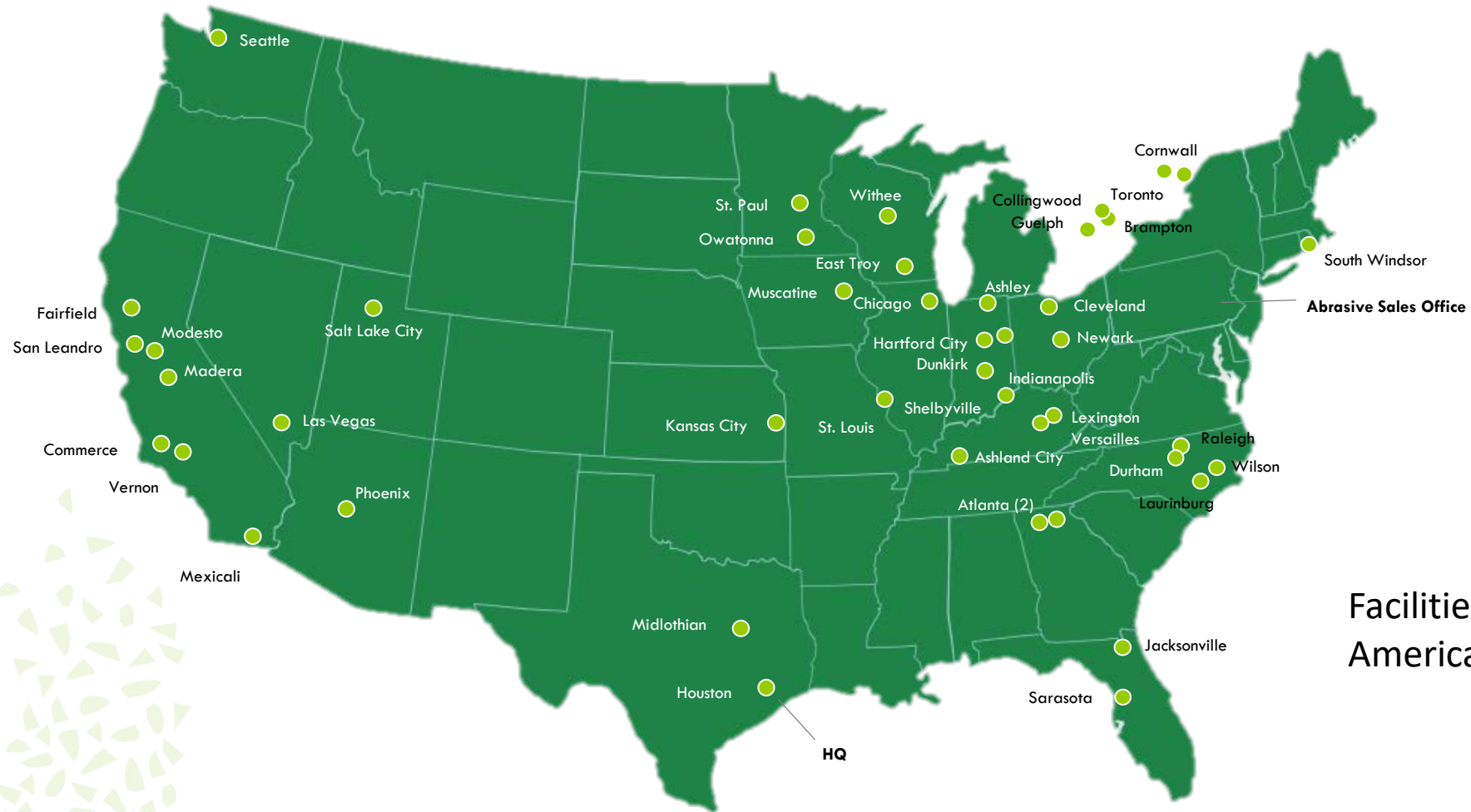


Throughout our 100+ year history, we have remained focused on creating value for our customers through innovation and customer improvement.



Strategic Materials

Footprint



Facilities in North America

Why Glass?



We recycle nearly **3 million tons of glass** a year into a variety of raw materials for manufacturing applications.

Recycled glass demand is more than current supply in the container glass and fiberglass insulation industries.



Why Glass?

Environmental Benefits

Glass is a sustainable, versatile, cost-saving material.

Glass never wears out and **can be recycled forever.**

One 6-pack of recycled beer bottles produces enough fiberglass insulation to fill a standard wall cavity.

Recycling glass takes 30% less energy to produce glass from virgin materials.

Recycling conserves natural resources



Testing Protocols

Inspections



We perform inbound quality inspections and rate them based on the percentage of usable glass, generally clean glass with minimal or no visible contamination, and amount of ceramic, rock, or color contamination.

Our delivery inspection is either by:

- **Visual inspection** - in the case of Mixed Window Plate (MWP), Clear Window Plate (CWP), whole or 3-dimensional flint, amber, green or mixed color or
- **Sample analysis** - in the case of 3 Mix (single stream) glass from a Material Recovery Facility (MRF)



Pricing

Better Supply = Better Pricing



Our pricing for incoming glass is now tied to the quality of the supply. Key factors that drive processing:

- Non-Glass Residue % and local landfill rates
- Undersize %, plant capabilities and local disposal options
- Significant variance from these color percentages may reduce or increase the value of cullet stream.
- Example:
 - Logistics cost = \$400 Truckload = 22 tons Logistics Cost per ton = \$18.18
 - Inspection reveals material is only 50% usable, true logistics cost = \$36.36 per *usable ton*
 - Supplier can improve to 65% usable , logistics cost = \$28 per usable ton
 - **Matrix based pricing increases the price to supplier**

Strategic Materials pays more for better material

Glass Future

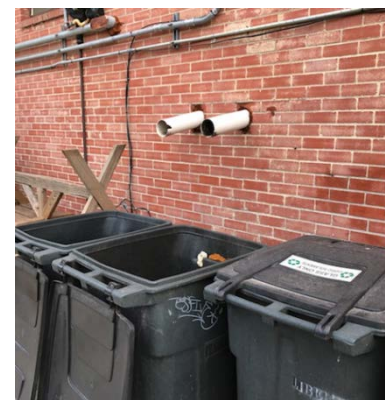


Collections:

Single stream – curbside collections

Glass drop offs & convenience sites

Private collectors serving multifamily and commercial establishments



Glass Future



Single Stream Better

- **Educate residents through social media or website about what is acceptable to recycle**
- **Improve or develop regular maintenance practices for MRF equipment**
- **Invest in new or upgrade equipment**
- **Utilize Strategic Materials glass handling & processing expertise**
- **Improve quality at the source**
- **Higher quality reduces logistics costs, reduces disposal costs and increases volume of glass recycled**

Best Practices

What works well

- Containers, deployment
 - Easy to recognize, branded containers, well marked labels
 - Creating local partnerships, community involvement, and awareness
- Small, independent collectors – job stimulus
 - Developing to address underserved markets
- Aggregation Site / Collection Hub
 - We work to create a centralized collection spot within the state from collectors to drop off materials. Transport them in bulk to our glass processing facility.



Region & Glass



The market for recycled glass in Region is strong, over 2300 people employed by nine companies in eight locations in 4 state region make over \$3.3 billion of products with recycled glass: fiberglass insulation, new food grade glass containers, abrasive media, and reflective beads.¹

¹ Reference: SERDC <http://www.serdc.org/maps>

End Market Companies Operating in region:

- Anchor – 358 people / OC – 300 people / Johns Manville – 266 people / Certain Teed – 192 people / Potters – 120 people / Fisher – 10 people / OI – 200 people / Owens Brockway – 200 people / Ardagh – 700 people

9 companies; 13 locations; 2386 local jobs; \$3.3B Revenues

Supplier Services



When you work with Strategic Materials, our experts can work with you to assess your operations and develop areas of improvement such as:

- New site construction suggestions to maximize value
- Quality improvement suggestions to maximize value
- Handling suggestions (i.e. spotted equipment, containers)
- Improvement financing
- Training

Glass is Viable



We believe recycling glass is viable and should continue to be a part of all recycling programs.

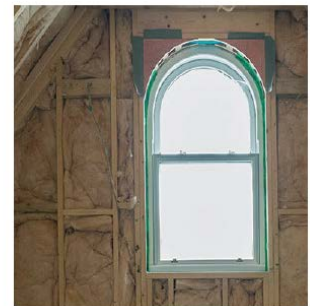
Glass never wears out. Demand for recycled glass products continues to be high.



Container



Abrasives



Fiberglass



Highway Bead



Fillers



Plastic



Specialty

Thank You



Thank You



Primary Contact, your Regional Sourcing Manager:

Bill Clark | **281-520-0613**
bclark@strategicmaterials.com

Our toll-free supplier hotline is **1-844-256-8985** or suppliers@strategicmaterials.com.

- Monday through Friday, 7:00am - 4:00pm CST
- Voicemails are typically returned within 24 hours.

Other Notable Contacts:

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