

# Regional Recycling Efforts



August 13, 2013

# SERDC Sponsor members



**SERDC.org**



**INVEST IN  
SUSTAINABLE  
GROWTH**



**CREATE  
JOBS**

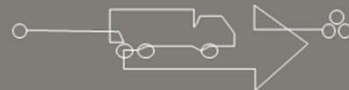


**REDUCE  
DISPOSAL**

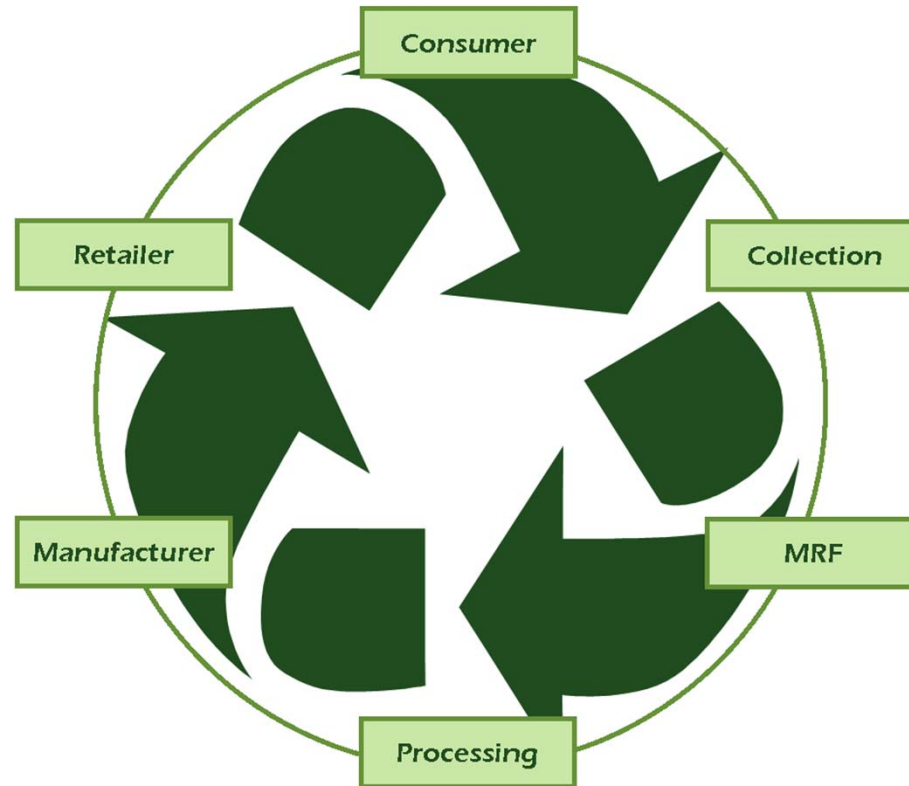


**CAPTURE  
VALUE**

**REALIZED  
POTENTIAL**



# What is recycling?



# What is recycling?



# SERDC research

**A summary of key Southeastern manufacturers who look to recycled content feedstock to build their consumer level goods.**



# Regional Collaboration = Increased Access to Markets

## Summary of Region Wide Findings:

- 206 manufacturers
- 47,525 employees
- \$29.4 Billion sales revenue



<b>State</b>	<b>Manufacturers</b>	<b>Jobs</b>	<b>Annual Sales</b>
Alabama	26	10,700+	\$6.6 billion
Arkansas	5	1,200+	\$0.4 billion
Florida	15	2,600+	\$1.5 billion
Georgia	31	7,000+	\$4.5 billion
Kentucky	17	4,300+	\$3.8 billion
Louisiana	10	2,900+	\$1.1 billion
Mississippi	3	525+	\$1.3 billion
North Carolina	30	2,800+	\$1.1 billion
South Carolina	24	5,300+	\$5.3 billion
Tennessee	30	6,500+	\$4.3 billion
Virginia	15	3,700+	\$3.6 billion
<b>Region Totals</b>	<b>More than 206</b>	<b>Greater than 47,525</b>	<b>Over \$29.4 billion</b>





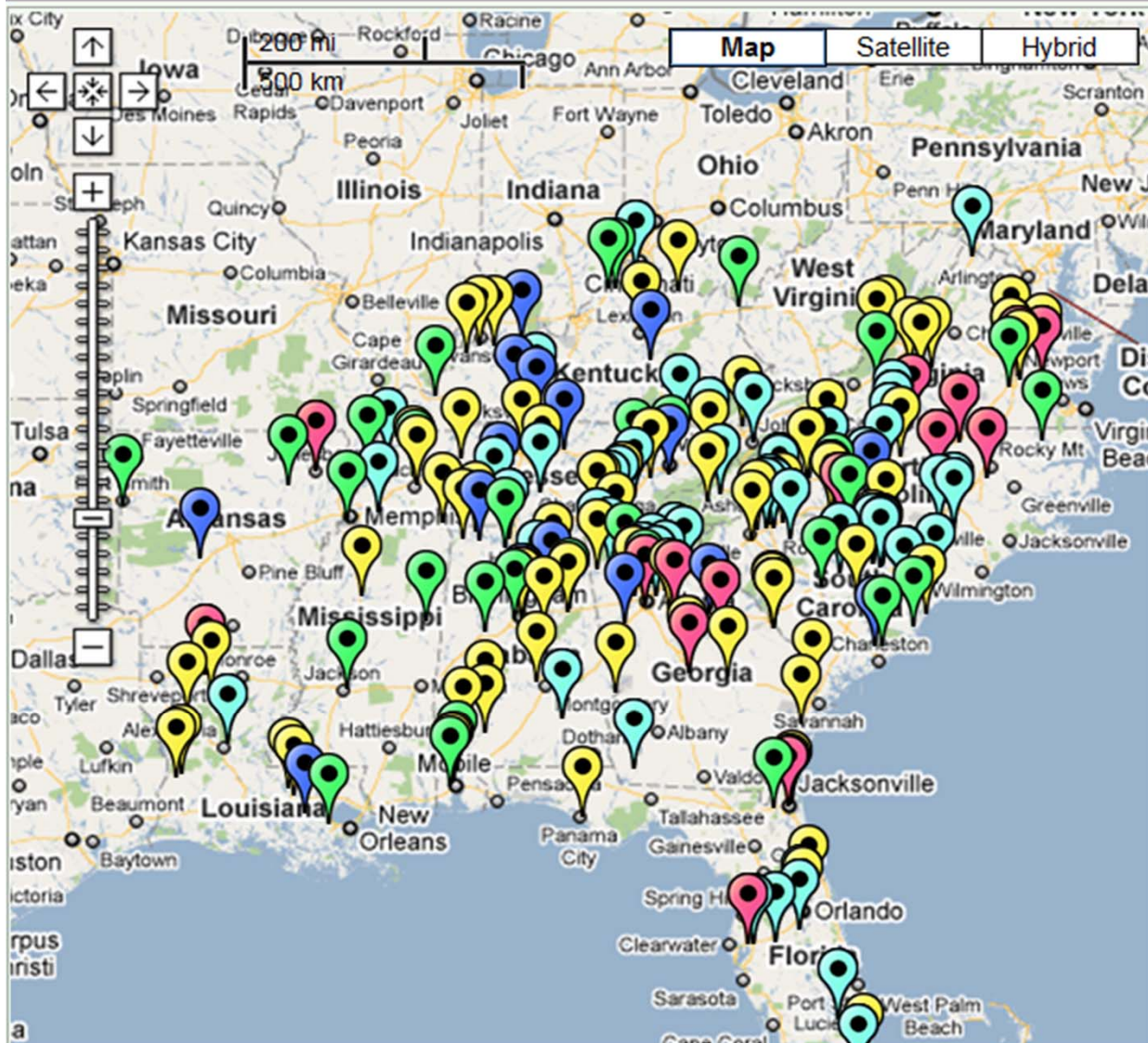
# Mapping Demand for Recycled Content Material

Southeastern manufacturers rely on recycled glass, plastic, metal, and paper to make new consumer goods.

Hide Map Controls

Print Map

Refresh Map



### Recycled Commodity Type

This map highlights key manufacturers who look to recycled materials to make their products.

- Select All
- Aluminum
- Glass
- Paper
- Plastic
- Steel

Show

Local investment in recycling fuels regional manufacturing. To search by company name, click the + signs below.

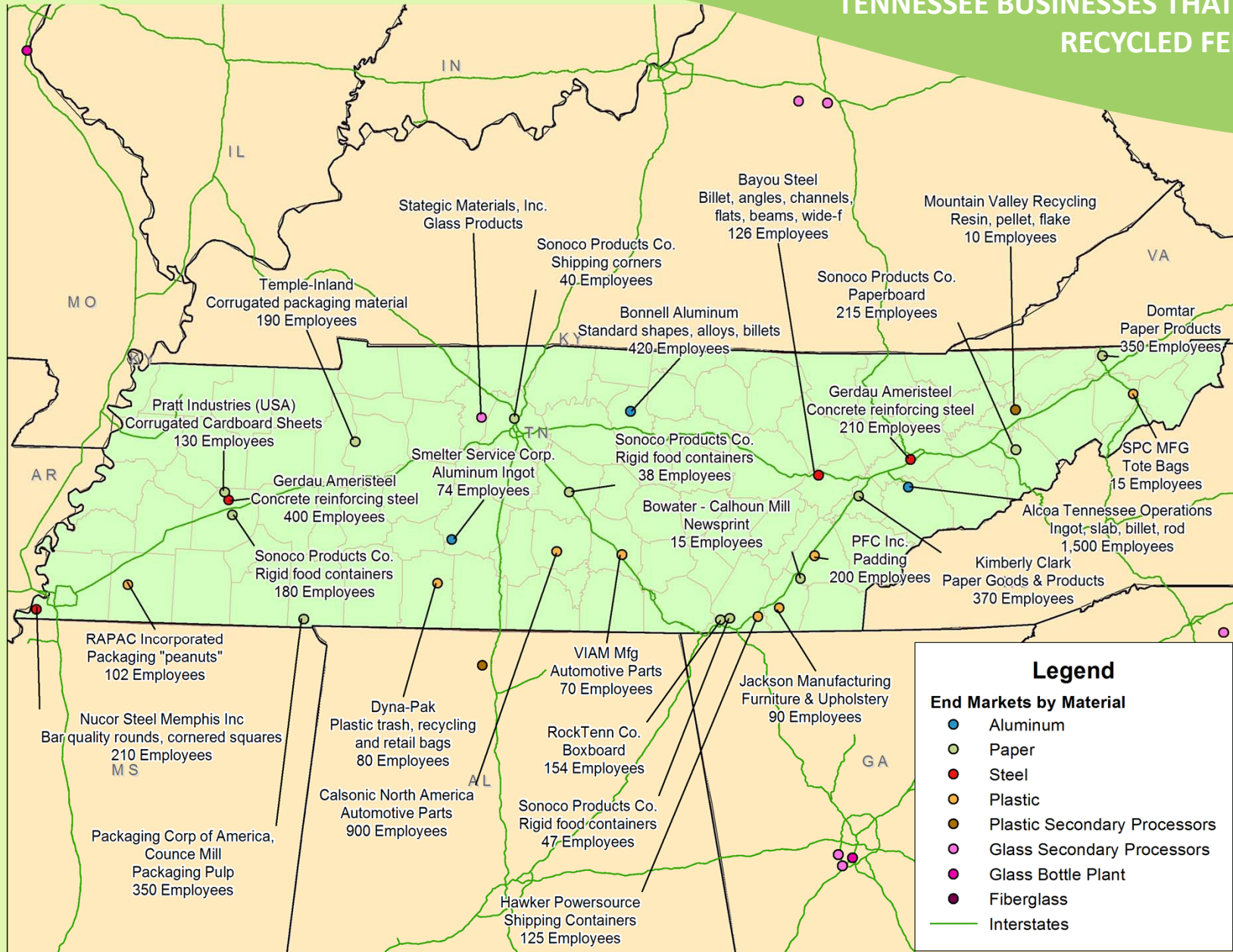
- + Plastic
- + Steel
- + Aluminum
- + Glass
- + Paper

# Tennessee

- Recent report: Characterization of Tennessee's Recycling Economy
- Symposium August 15 & 16, 2013
- Workshop series 2012



# LOCAL END MARKETS TENNESSEE BUSINESSES THAT RELY ON RECYCLED FEEDSTOCK



### Legend

**End Markets by Material**

- Aluminum
- Paper
- Steel
- Plastic
- Plastic Secondary Processors
- Glass Secondary Processors
- Glass Bottle Plant
- Fiberglass
- Interstates

# URBAN w/ CURBSIDE & DROP-OFF



POPULATION  
**601,122**

HOUSEHOLDS  
**242,474**

## SERVICE

**curbside:** City households w/ access to carts: 140,000  
service once monthly  
95 gallon roll-carts

**drop-off:** 13 drop-off sites and 3 convenience centers



## ACCEPTED

All paper & boxes (including cartons)  
All plastic bottles and containers (including tubs, lids, and plastic trays)  
All metal and aluminum cans  
Glass bottles and jars can be recycled at drop-off sites and convenience centers only.

## FACILITY

**Waste Management, Inc. Recycling**  
DISTANCE TO RECYCLING FACILITY: Nashville, in-town

## COLLECTED

tons collected curb & drop-off

**20,069**

**166**

pounds per household

## AVAILABLE

tons of focus materials disposed

**110,000**

## MOVING FORWARD

Increase access and collection frequency

50% of available focus material from residential sector means 55,000 tons of added diversion



End User

## ALCOA TN OPERATIONS

ALCOA, TN

EMPLOYEES **1500**



**TYPE** Aluminum cans

**AMOUNT** At least 175,000 Tons/year

**Distance range for sourcing supply:**  
Domestic & International



**Purchase price:**

Market price, currently \$.88/lb\*

**Product manufactured:**

Rigid Container Sheet (RCS). Used to make new aluminum cans.

**Product value:**

Price range for RCS is in the \$1.50 to \$3.00/lb range (FOB sellers dock)\*

### COMMENTS

The Alcoa, TN plant is the largest aluminum can sheet mill in the world. This mill produces ~90% recycled content rigid container sheet. Alcoa closed their East Tennessee smelter in 2009. They no longer make aluminum from ore since the smelter shut down and currently alternatively use recycled feedstock. Alcoa sources material both domestically and internationally to meet mill demand.

It is estimated that 2.3 billion cans were used in the state of TN in 2008. At a count of about 34 cans per pound it works out to 67.6 million lbs. of aluminum cans consumed and available for recycling per year in TN, or 33,800 tons.

**Annual municipal recovery  
in TN of aluminum cans:**

**2,570**  
TONS

End User

**ROCKTENN CORRUGATED SHEET PLANT**  
CHATTANOOGA, TN

EMPLOYEES **154**



**TYPE** OCC, DLK

**AMOUNT** 146,000 Tons/year

**Distance range for sourcing supply:** Supplied by 7 RockTenn mills producing linerboard and corrugating medium across Southeast



**Purchase price:**

Market price, currently about \$500/ton (corrugating medium), and \$750/ton (linerboard)\*

**Product manufactured:**

Corrugated Cardboard Sheet  
70 to 80 million square feet produced per month.

**Product value:**

\$0.1 to \$0.2/sq ft (about \$2,000/ton)\*

**COMMENTS**

RockTenn is one of North America's leading producers of corrugated and consumer packaging and recycling solutions. Based in Norcross, Ga., they employ approximately 26,000 people and operate more than 240 facilities in the United States, Canada, Mexico, Chile, Argentina and China.

RockTenn is vertically integrated and has many assets located in TN, including MRF's, mills, sheet plants and converting facilities. The Chattanooga corrugated sheet plant produced a record 93 million sq feet of corrugated sheet in Oct 2012.

**Annual municipal recovery in TN of OCC:**

Est. **70,000**  
TONS

End User

## VICAM (VIAM MANUFACTURING)

MANCHESTER, TN

EMPLOYEES **70**



TYPE PET

AMOUNT Capacity of 5,475 Tons/year

Distance range for sourcing supply:

AL, SC, Japan



Purchase price:

clean, clear PET bottle resin (flake or pellet)  
market price, currently \$.70 - \$.89/lb\*

Product manufactured:

PET Staple Fiber

Product value:

Current market value range = \$2 to \$3/kg, or  
\$0.90 to \$1.36/lb.

Annual municipal recovery  
in TN of PET Bottles:

Est. **3800**  
TONS

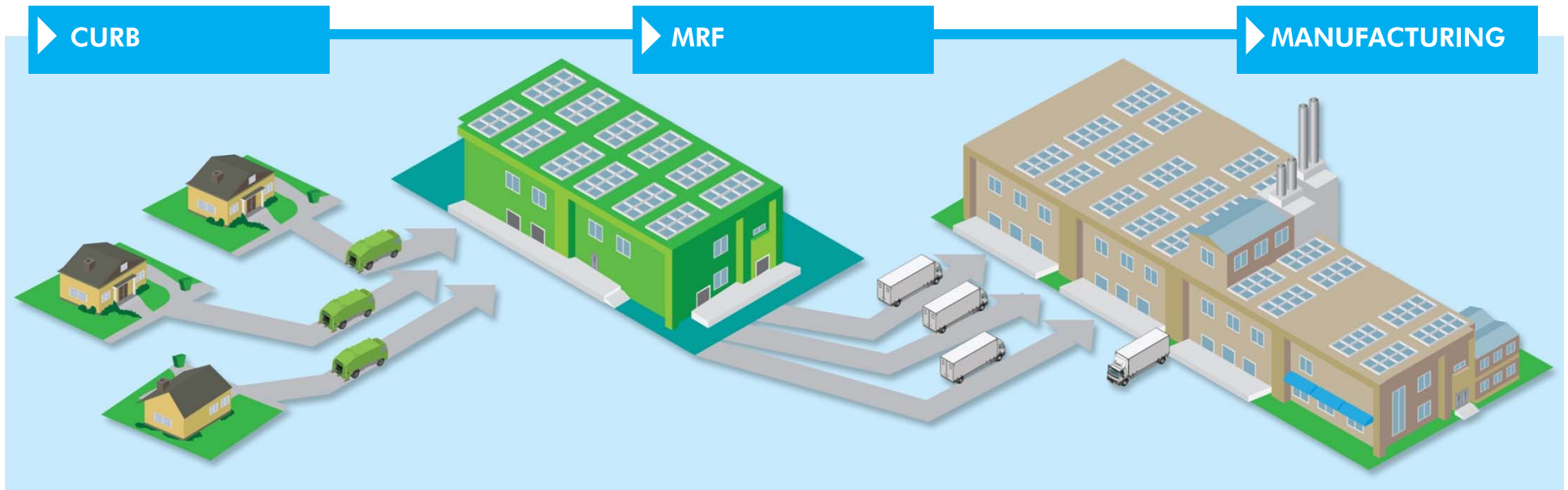
### COMMENTS

The company is a newly formed subsidiary of leading nonwoven materials producer Japan Vilene Company (JVC) managed by VIAM Manufacturing and utilize technology developed by Oyama Chemical. VICAM invested \$32 million to build a facility for the production of a polyester-based carpet fiber and opened in March 2012. This investment will produce 70 new jobs at full capacity.

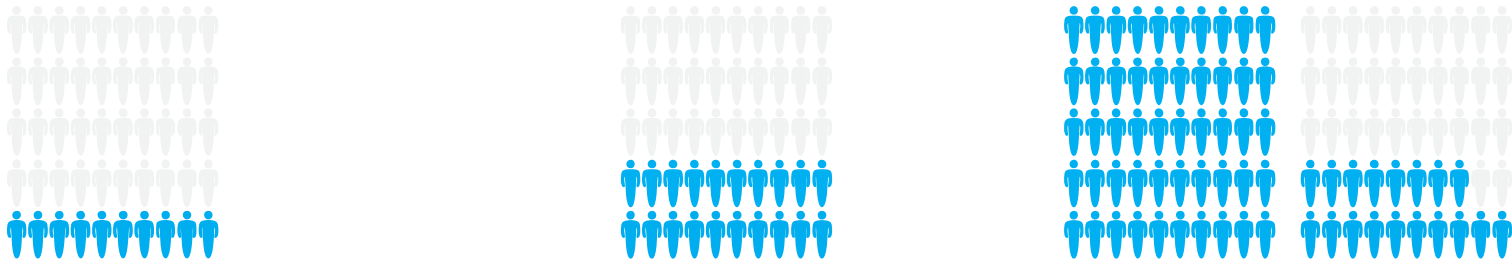
VICAM's new Manchester facility produces polyethylene terephthalate (PET) staple carpet fiber by recycling PET clear bottles, using Oyama Chemical's fiber technology. The carpet fiber will then be used in headliner, seat backs and door panels in the automotive industry.

The plant is located on a 12-acre site that houses a 44,000 square foot facility with the capability for future expansion of 120,000 square feet. Future expansion plans include supplying PET staple carpet fiber to VIAM Manufacturing in their manufacture of automotive floor mats. As a producer of high quality, custom design floor, trunk and cargo mats, VIAM is a supplier for many of the big automotive companies, including Nissan North America, Inc.

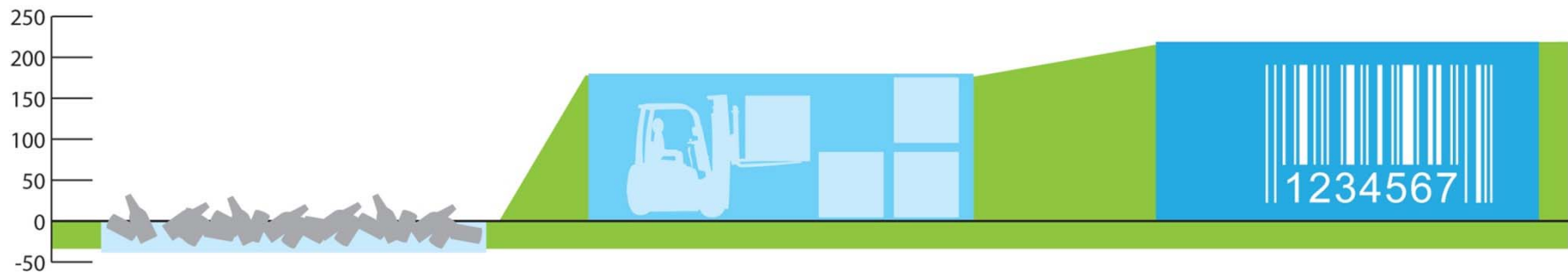
# Lifecycle of Material in Tennessee's Recycling Economy



## JOBS



## MATERIAL COST/VALUE





# Tons of Recyclable Collected per Household

City	Average Pounds Collected for Recycling per Household per Year
Oklahoma City, OK	106
Dallas, TX	285
Fort Worth, Texas	335
Atlanta, GA	358
El Paso, TX	412
Phoenix, AZ	542
Austin, TX	590
San Jose, CA	875

# Factors Affected Tons Recyclables Collected per Household

City	HH served	Container Size?	PAYT?	Lbs/hh/yr
Oklahoma City, OK*	172,000	18-gal bins	No	106
Dallas, TX	250,000	90-100 gal	No	285
Fort Worth, TX	202,000	60 – 70 gal	Yes	335
Atlanta, GA	95,000	90-100 gal	No	358
El Paso, TX	168,000	90 – 100 gal	No	412
Phoenix, AZ	390,000	90-100 gal	No	542
Austin, TX	189,000	90-100 gal	Yes	590
San Jose, CA	212,000	90 – 100 gal	Yes	875
* Dual stream				

# Possible Steps to Take

- More frequent collection
- Mandate waste metering (PAYT)
- Increase outreach
- Disposal restrictions
- Required participation
  - Select industries (ABC permits)
  - General

# SERDC Resources

[www.serdc.org/regionalresources](http://www.serdc.org/regionalresources)

- Economic Reports
- State Recycling Resources
- Market Directories
- Waste Exchanges
- SERDC maps and publications

**SERDC.org**

# 2013 TENNESSEE SYMPOSIUM

A TENNESSEE DEPARTMENT OF ENVIRONMENT & CONSERVATION SYMPOSIUM



O P P O R T U N I T I E S    A B O U N D

NASHVILLE, TENNESSEE  
AUGUST 15-16, 2013

**SERDC**  
Southeast Recycling Development Council

**TDEC**  
TENNESSEE DEPARTMENT OF  
ENVIRONMENT AND CONSERVATION

# Contact Information

**Will Sagar**

Executive Director

[will.sagar@serdc.org](mailto:will.sagar@serdc.org)

(828) 507-0123



**[SERDC.org](http://SERDC.org)**