

The State of Carpet Recycling in the U.S.



Dr. Robert Peoples
Executive Director
CARE
bpeople@carpetrecovery.org

NERC Annual
Conference
April 7, 2015

Who is CARE



CARE has been THE resource for carpet recycling since 2002

Diverse Board of Directors

452 members

Mission: Market-based solutions for reuse and recycle of post-consumer carpet.





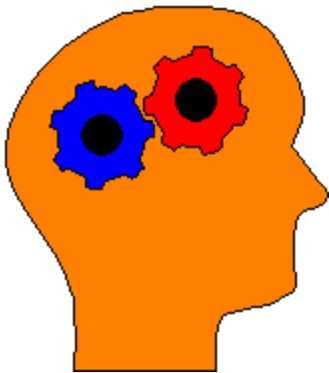
Mission

The mission of CARE is to facilitate the carpet industry lead initiative to find market-based solutions for the reuse and recycle of post-consumer carpet.

Created January 8, 2002 as a 501c3 organization

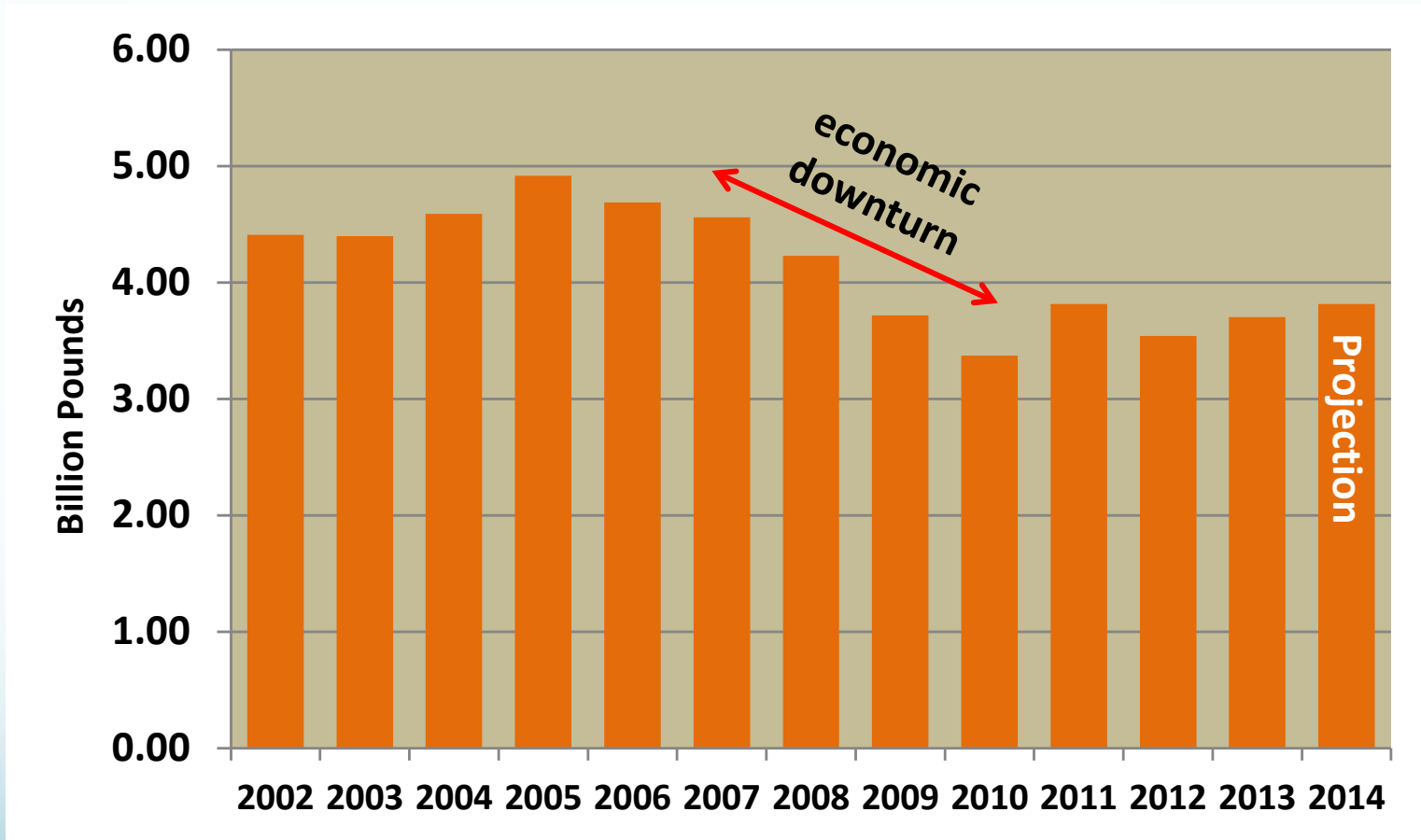


How Much Carpet is Discarded Each Year?



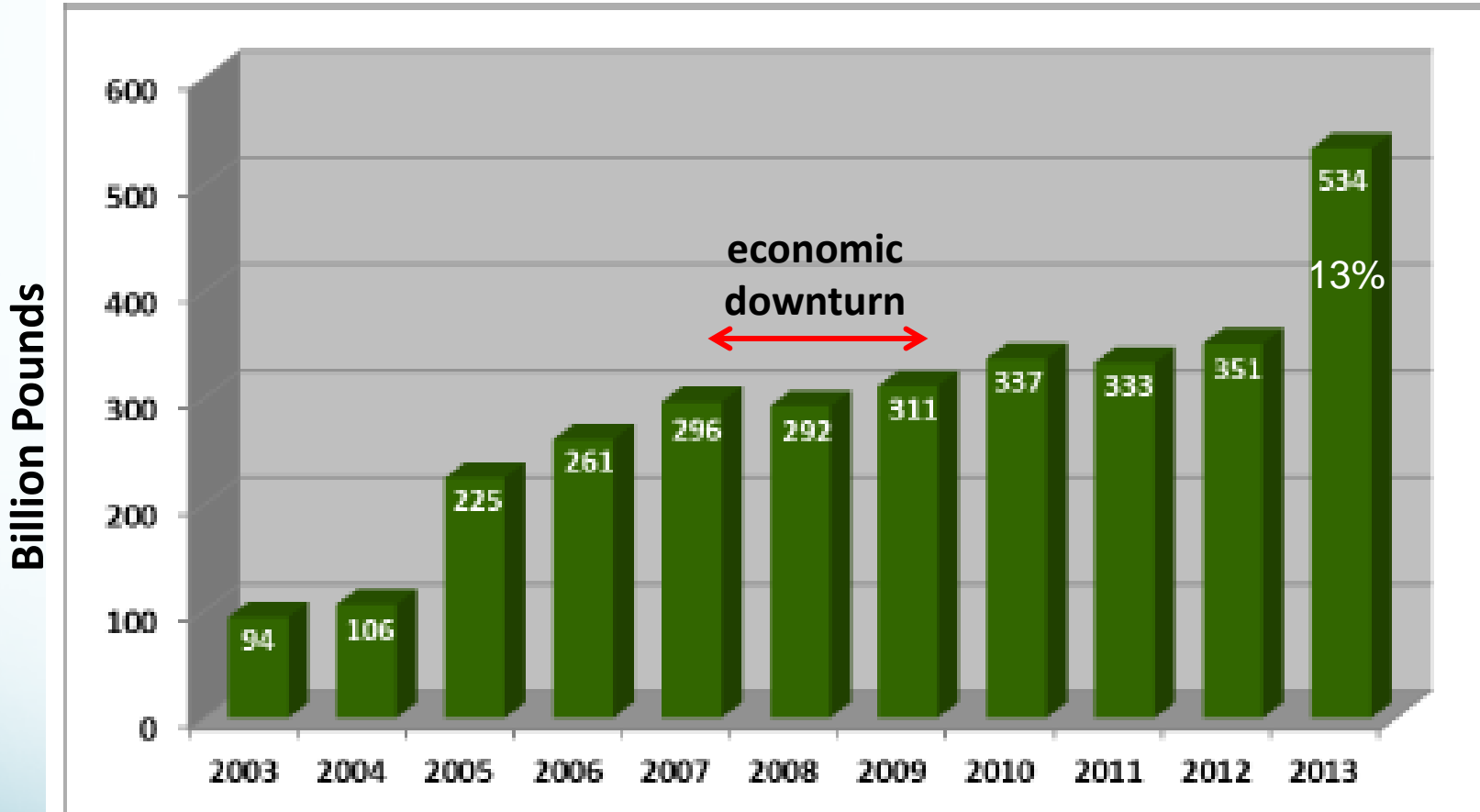
Total Estimated Discards per Year

Discards parallel production



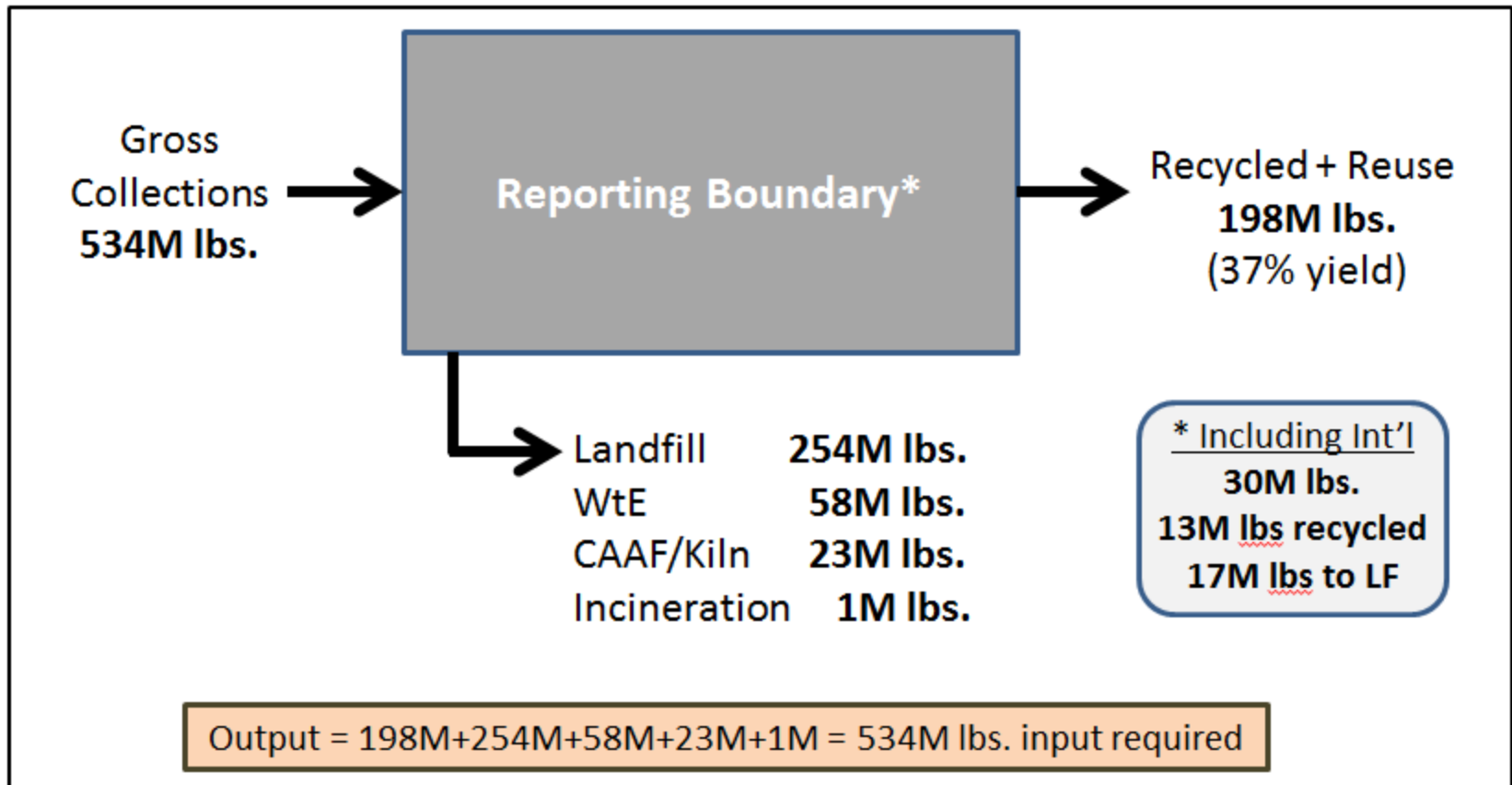
Source: Data Discards.xls

Total Gross Collections per Year

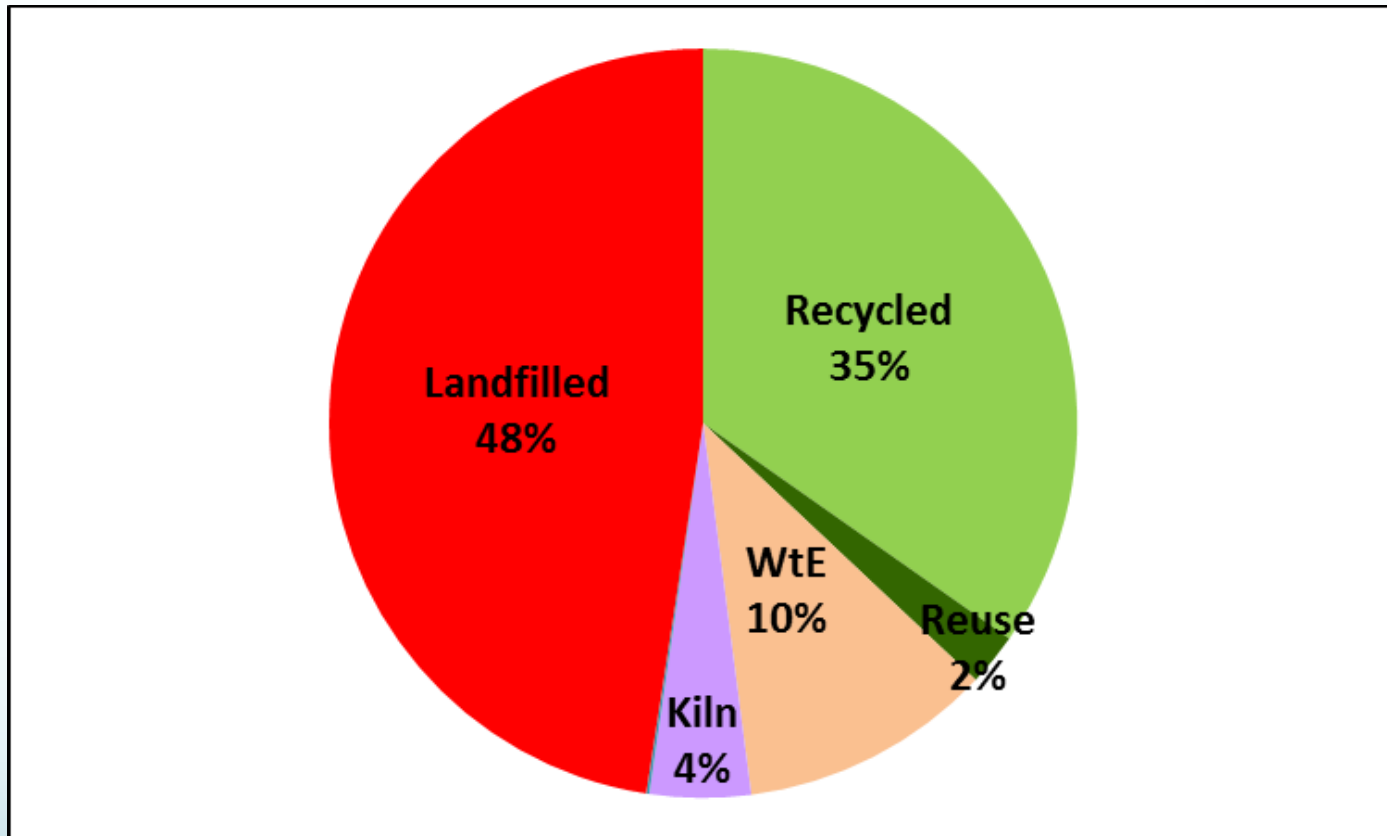


Cumulative Diversion Since 2002 >3.5 Billion Pounds

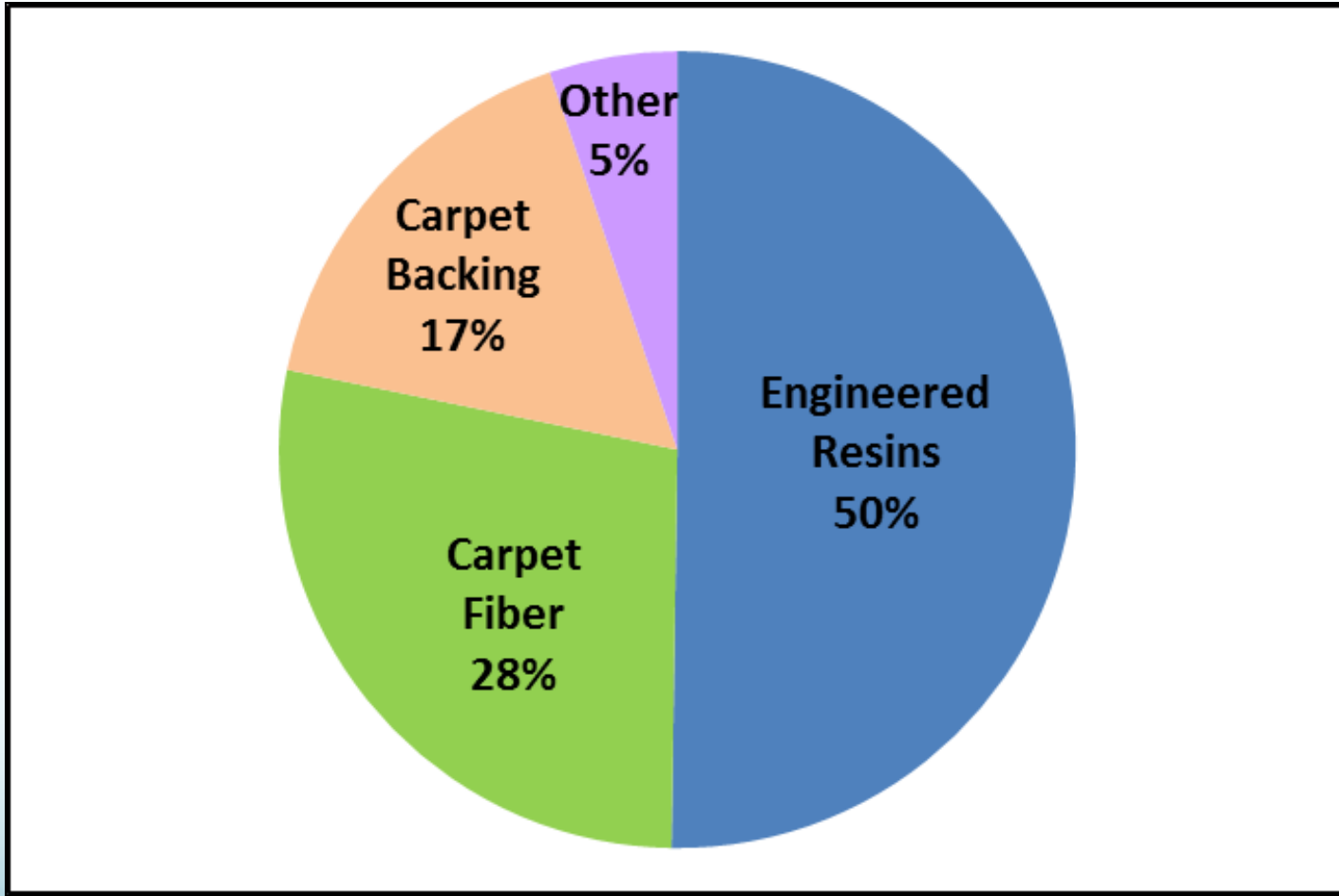
Mass Balance Approach



Outlet for Pounds Collected

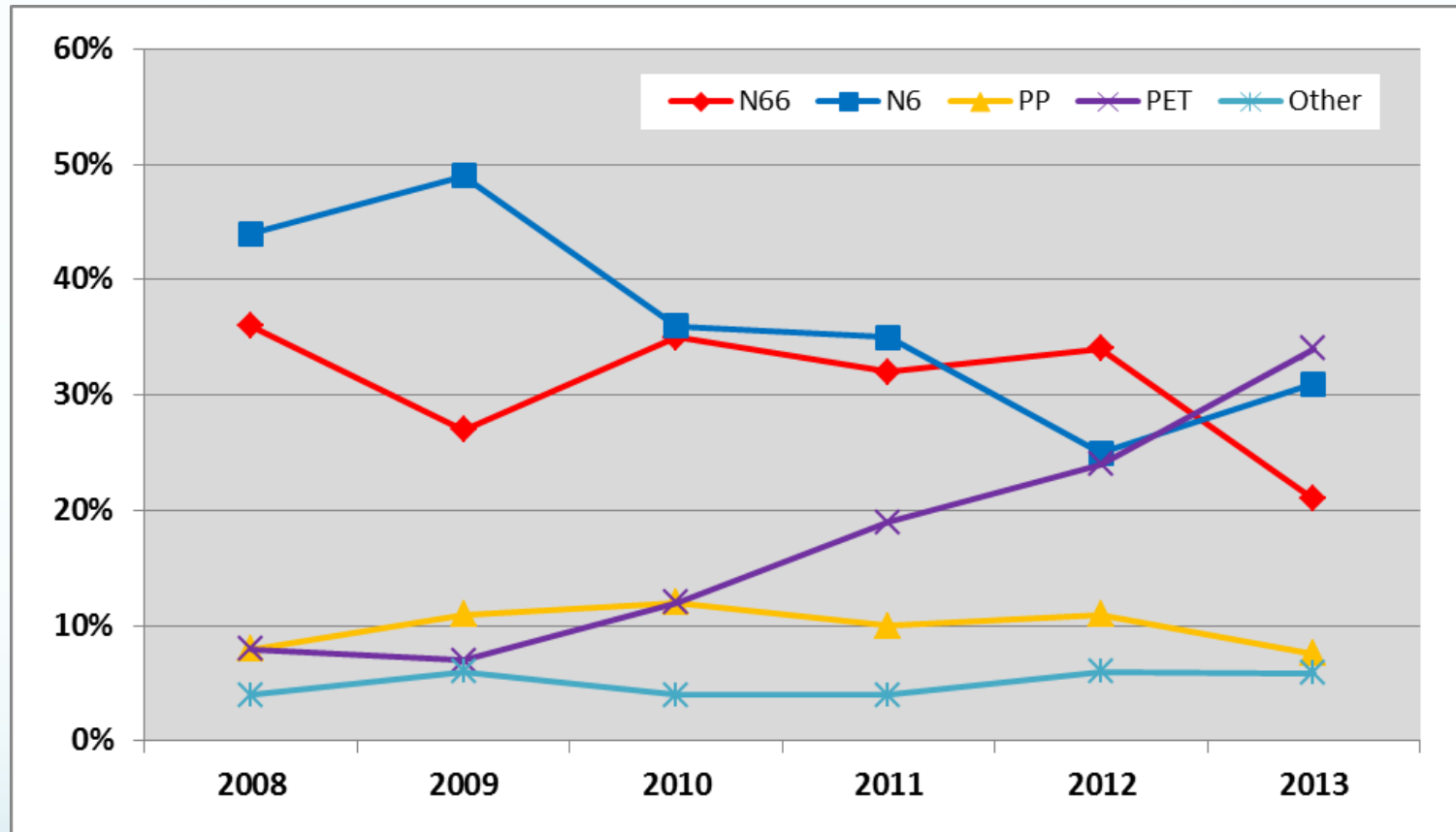


End Product Markets



Source: 2013 CARE Annual Report

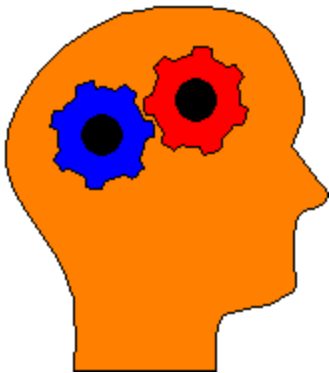
Sorted Fiber Type vs. Time



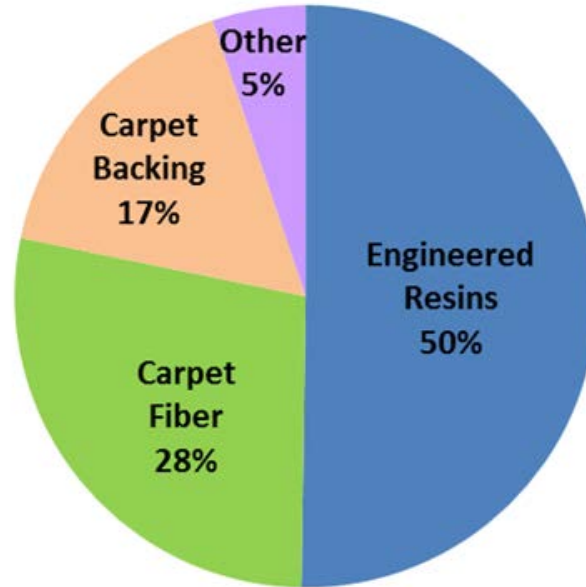
* This chart excludes 2013 lbs. of PCC collected from 3 sources that do NOT collect PET or PP. This chart more accurately reflects actual flows of PET PCC.

PET went from <10% in 2008 to forecast 50% in 2015

Examples of Products



End Products





7000 ENVIRONMENTAL PERFORMANCE COLLECTION .35"

BERBER SELECT

Residential Carpet Cushion
New Homes / Property Management / Carpet-Retail

<p>LUXURIOUS FEEL UNDERFOOT <i>Offers maximum comfort & superior support with every step.</i></p>	<p>PROTECTS YOUR NEW CARPET <i>Keeps your new carpet looking newer, longer.</i></p>	<p>NOISE SUPPRESSION <i>Best selection for suppressing noise emanating from both within a room, upstairs, or from the outside.</i></p>
<p>HELPS KEEP OUR ENVIRONMENT CLEAN <i>Raw materials obtained from post-consumer sources kept out of landfills.</i></p>	<p>ANTI-BACTERIAL <i>Prevents mold, mildew, bacteria, and odor to maintain freshness & extend wear.</i></p>	
<p>A BALANCED CUSHION <i>Feel / firmness for maximum required support.</i></p>	<p>RELIANCE FLOORING CONCEPTS DIVISION OF: RELIANCE CARPET CUSHION</p>	

Purchase environmentally friendly carpet cushion, make a difference in our environment. Environmental carpet cushions are manufactured from post-consumer carpet. Thank you for making a difference.

Carpet Cushion

Revolutionary Substrate from 100% Post-Consumer Content



Our products are made from post consumer electronic Packaging, carpet and textile waste that would otherwise be discarded in our Landfills. Our process is flexible enough to utilize a variety of waste streams to create new products, signs and substrates

Traffic Signs



Cove Base



Indoor Signage



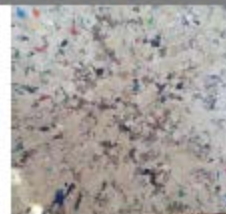
Thermoforming Panels



Indoor ADA Signage



Flooring and Core for Laminate



GeoHay™

Gutter Buddies®



Synthetic Hay Bales & Filters

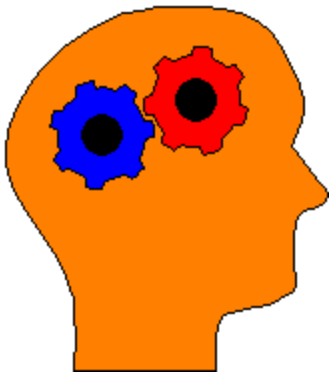


Precast Concrete, Asphalt, and Plastic

FROM **CARPET** TO
CAR PARTS



Challenges



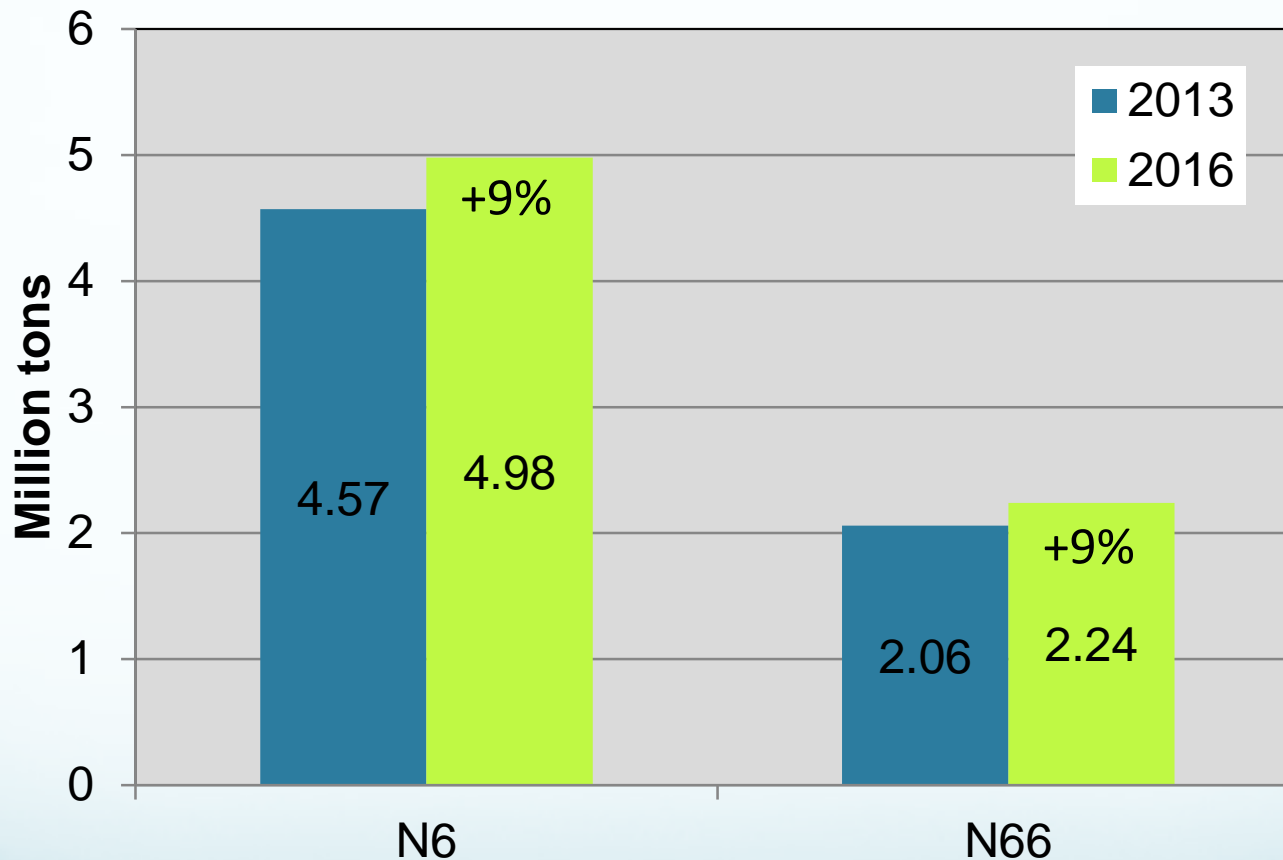
Three Major Challenges



- OUTLETS ← #1 Challenge

- ✓ PET Carpet – *economics*
- ✓ Nylon carcass (from shearing) - *economics*
- ✓ Commercial glued down carpet - *technology*

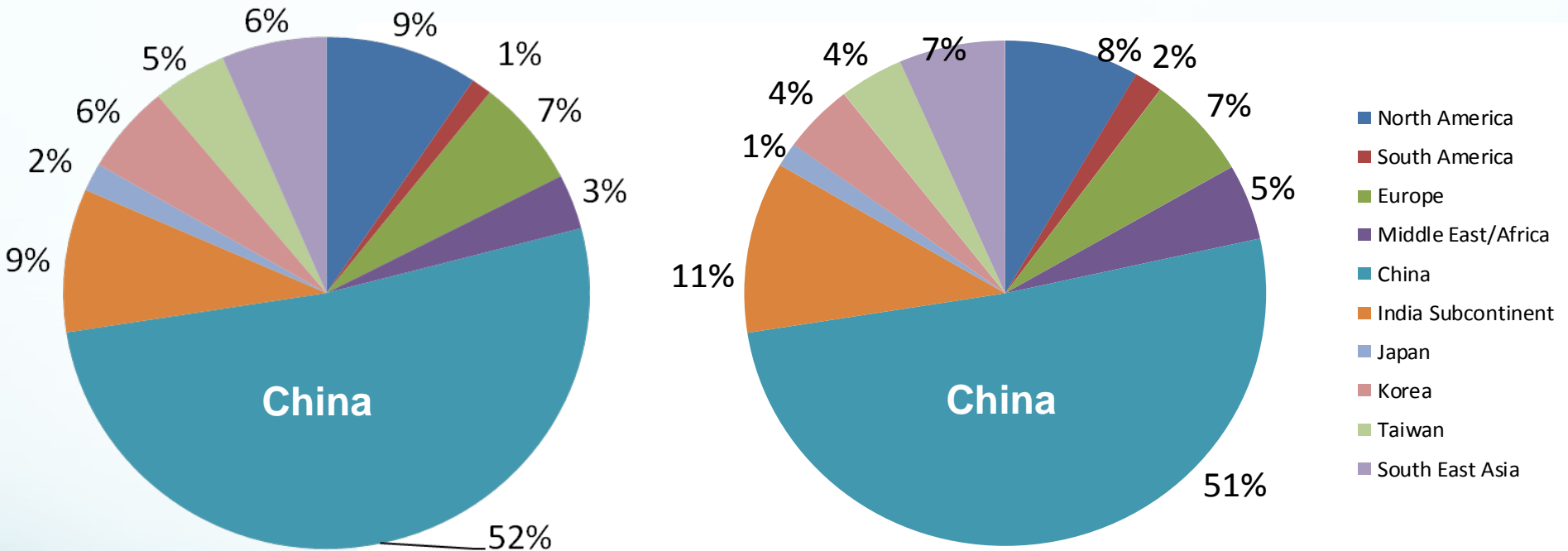
World Nylon Growth Expected



Growth driven by China



World Polyester Polymer Production (by Major Region/Country)



2012 Total = 60.25 Million Tonnes

2016 Total = 76.72 Million Tonnes

Growth = 27%

Source: PCI X&P



Practical Issues

- PET carpet growing with limited recycle outlets
- Commercial carpet glued down – very tough to handle
- Cyclical markets = tough economics
- Communications

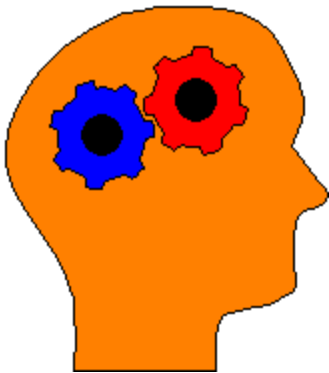
- Inbound carpet loads not clean = disposal cost
- C&D contamination often so bad whole load must be disposed
- C&D loads 3x more expensive to sort than dealer loads
- Contamination issue rare - potential for asbestos
- Most companies do not want to pay for recycle services

Residential Carpet Most Valuable





California Update



Data available on the CalRecycle website:
www.calrecycle.com/carpets

California AB 2398

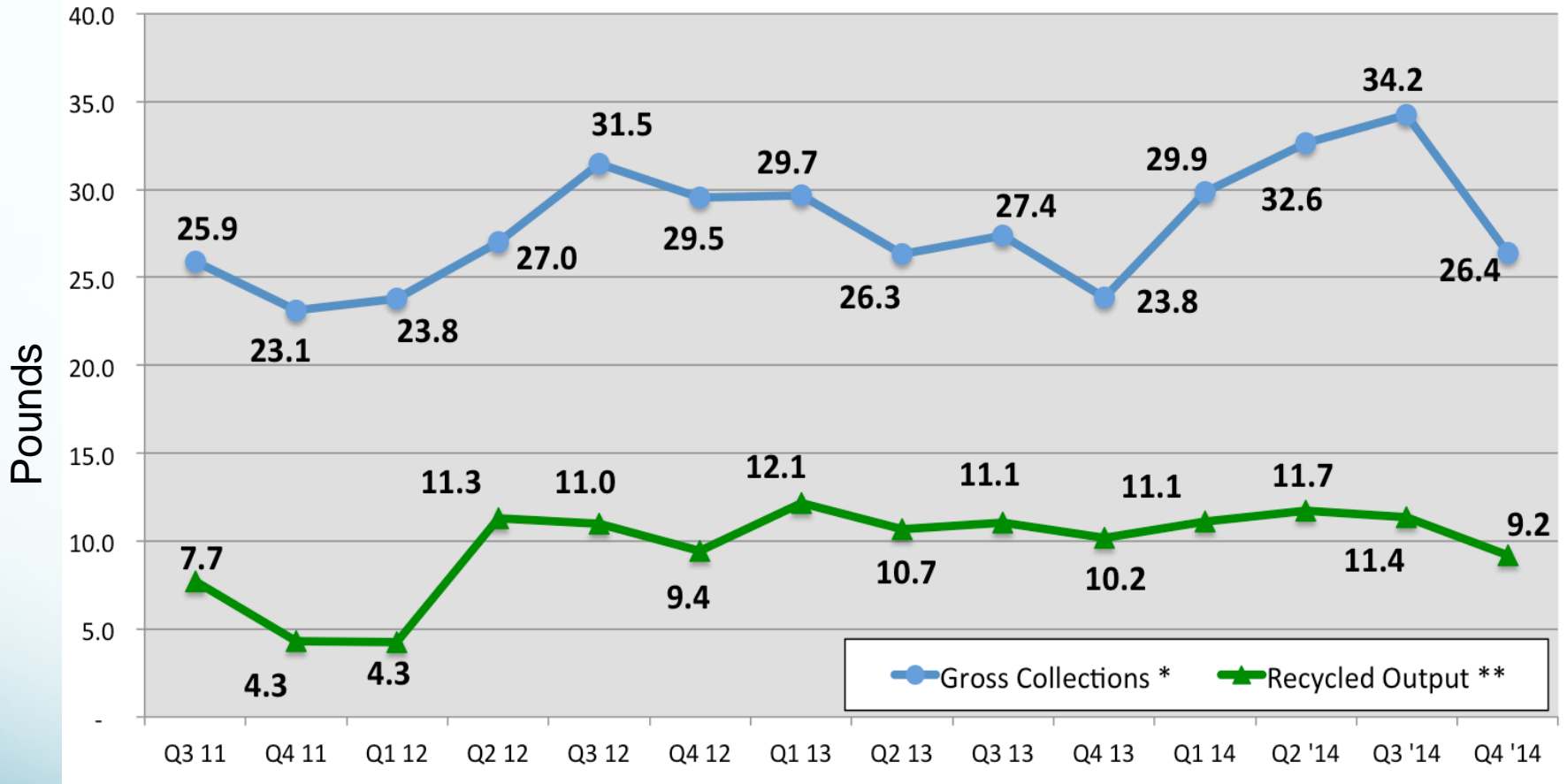


- **Legislation to increase the landfill diversion and recycling of post-consumer carpet generated in CA***
- **CARE is the Stewardship Organization for AB 2398**
- **Major changes April 1st**
- **10 cents/sqyd fee April 1st**
- **Processor subsidies**



*AB 2398, signed into law September 30, 2010

California Performance Trends (pounds)





AB2398 Manufacturers' Summary*

Manufacturers	2011	2012	2013	Q1 '14	Q2 '14	Q3 '14	Q4 '14
# Mills Registered	80	80	79	79	79	79	77
# Mills Not Reporting	0	4	5	2	0	1	1
Non-response Rate		5%	6%	3%	0%	1%	1%
Remittance Collected							
Total Sq Yd Sold (millions)	50.1	98.5	100.5	23.6	25.7	26.1	23.5
Total Remittances (\$M)	\$2.53	\$4.91	5.0	\$1.18	\$1.28	\$1.31	\$1.17
Top 10 Remittances (>\$10K)	\$2.33	\$4.55	4.65	\$1.05	\$1.18	\$1.20	\$1.06
Top 10 Percentage of Total	92%	93%	92%	89%	92%	92%	90%

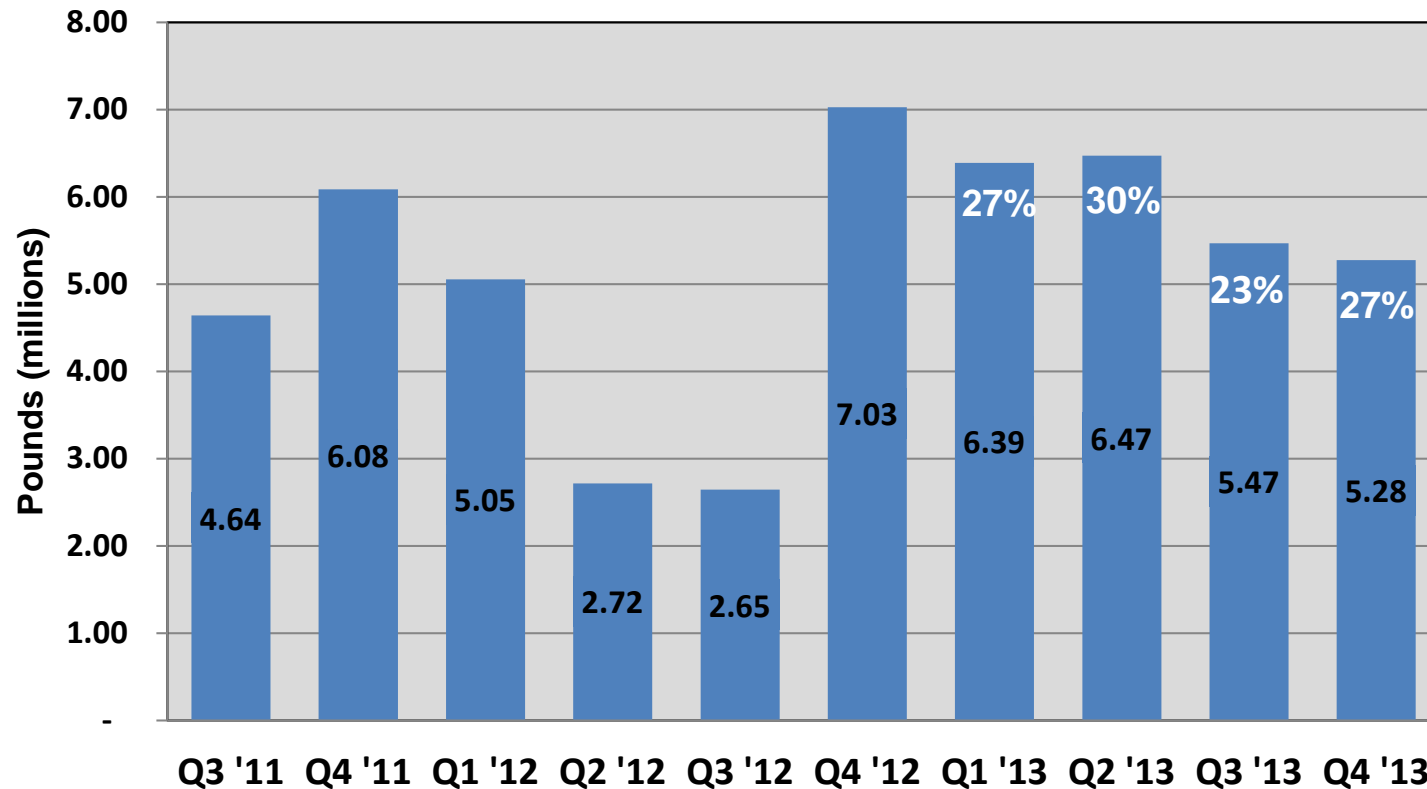
Cumulative SQYD sold: 348M

Cumulative Remittances: \$17.4M

* As of 2/10/15

Net Landfill Diversion

(Gross Collected - Sent Back to Landfill)



Q4 Diverted = 19.5M – 5.3M lbs. sent back to landfill
 Cumulative back to landfill: 51.8M lbs.



Lessons Learned

- Learning on the fly
- Do not have all answers from start
- \$s involved = creative people
- Gaming system → problems → shutdowns
- Developed agreed upon procedures (AUPs)
- Audit/review process critical (independent)
- Build in early indicators – **Inventory vs. Processed**
- Address issues early and aggressively



Lessons Learned

- **Confidentially: individual business information important**
- **Constant analysis and refinement of AUPs**
- **Regular & transparent reporting**
- **Stakeholder engagement essential**
- **FAQs help**
- **A few states trying to pursue EPR:**
 - CA*, MN, CT

* implemented



Contact Information

Dr. Robert Peoples

214-300-5206

bpeoples@carpetrecovery.org

www.carpetrecovery.org

