CARE 2015 ANNUAL REPORT
CARE 2015 Annual Report

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Mission Statement
The mission of CARE is to advance market-based solutions that increase landfill diversion and recycling of post-consumer carpet, encourage design for recyclability and meet meaningful goals as approved by the CARE Board of Directors.

Vision
Post-consumer carpet diversion and recycling are economically, socially and environmentally sustainable for all stakeholders.

Core Values
We believe in:

- Market-Based solutions
- Entrepreneurship
- Hierarchy of Waste Management
- Sustainable practices (economic, social and environmental)
- Resource conservation
- Transparency
- Multi-stakeholder collaboration
- Professional ethics and integrity
- Anti-trust compliance
**CARE 2015 Leaders**

**Sustainability Leaders**
- Aquafil USA
- Beaulieu of America
- Interface
- J & J Industries
- Masland Carpets
- Milliken & Company
- The Mohawk Group
- Shaw Industries
- Tandus Flooring
- Universal Fibers
- Wellman Plastics

**Friend of CARE**
- Polymers Center of Excellence

**CARE Members**

CARE now has 181 members. Please visit [www.carpetrecovery.org](http://www.carpetrecovery.org) for a complete list of CARE members.
Message from the Chairman of the CARE Board of Directors

I hope this letter provides you, as a CARE stakeholder, with insights and a clear summary of our organization’s situation. 2015 has been unique, but adaptation is part of our DNA. To illustrate this, I will draw your attention to three specific topics – external environment, strategy, and operations.

I have previously spoken of a “crucible of crisis” in referring to the challenges facing our nationwide network of Collector-Sorter-Entrepreneurs [CSEs]. 2015 has brought them even greater challenges. Crude oil prices ended 2015 below $40 per barrel. This has a delayed, yet direct correlation to virgin polymer prices, which in turn have a direct correlation to demand for recycle. In 49 states, I would be making an understatement in citing the Voluntary Product Stewardship [VPS] plan as the difference between open doors or discontinued carpet recycling operations for many within our CSE network. As Chairman, I’d like to recognize the contributing members of the Carpet & Rug Institute, their leadership, and our vice–chair for answering the desperate needs across a near-collapsed 2015 marketplace for recycled carpet polymers.

Our CARE Board is composed of directors from the carpet industry, CSEs, “at large”, and government. 2015 has brought exponential growth in CARE’s scope of responsibilities, including financial oversight, in comparison to the past half-decade. Prudent organizations develop a strategic plan, resource it, and routinely check for progress made and challenges encountered. With skilled facilitation, our Executive Director Dr. Bob Peoples brought such a plan to the Board in early 2015 and have made it “actions to live by.” Admittedly, emergencies continually provide distractions from long term strategic focus, but to re-state: adaptation is part of our DNA. CARE is now operationally structured in three key segments: 1) California - as the stewardship organization under AB2398, 2) VPS – administrator for its stated two-year life, and 3) core operations – continuing to promote market-driven initiatives consistent with its mission.

Our Executive Director’s report shares a detailed roadmap on how these operations executed in 2015 and I highly encourage you to read it. I would assure you that Board oversight and engagement have kept pace with this growth and complexity. Third party audits of funds collection and disbursement continue unblemished.

To conclude, CARE is in position to address ongoing and new challenges that 2016 will bring. The state of our recycled carpet materials markets is not back to normal. A newly formed task group is singly focused on this – our main problem. Some will say “results count more than efforts.” I would counter that the product is always determined by the process. The 4th letter in our name is EFFORT – and thankfully as I look across our organization, I see countless examples. CARE’s greatest strength continues to be this dedication of its people. Huge thanks go to our Executive Director Dr. Bob Peoples, our Operations Director Anthony Cline, our California AB 2398 team, our financial, legal, marketing, and event service providers, the CRI staff who generously share their time and talents, and finally - our Board Directors and advisors.

Sincerely,

Brendan F. McSheehy
Chairman, Board of Directors
Message from the CARE Executive Director

Dear CARE Stakeholders:

Stating the obvious, our rollercoaster ride continues for carpet recycling. In 2015 other major recycled commodities around the world also saw markets and prices collapse due to the drop in the price of oil. In addition, loss of domestic processing capacity, a decrease in demand from China and new capacity for virgin caprolactam out of China all conspired to hit the carpet recycling industry very hard. I believe your CARE Board understands these dynamics and the challenges they pose to our recyclers. In response to these issues, an important new program was launched in January 2015 – The Voluntary Stewardship Program (VPS). This voluntary, carpet industry-funded initiative dispensed $4.5 million to aid collector/sorters across the U.S.. The feedback was very positive, with many recipients stating they deeply appreciate this support and that they would have had to close their doors were it not for VPS. An important decision was taken in late 2015 to continue funding the VPS Program for 2016.

No report would be complete without reference to the efforts underway in California. We made good progress in 2015, especially in the latter part of the year, when many new initiatives were launched and are now gaining momentum. Given all the challenges in the California recycling world, CARE can stand tall, knowing we are making a difference and delivering on the challenge of continuous and meaningful improvement. CARE issues a separate and comprehensive report on the California program; for those who wish more detail, I recommend you download that report from the CalRecycle website.

Our annual survey informed us that our members are satisfied with the support and services CARE is providing. However, on a personal level I understand the pain that the carpet recycling community is dealing with, and every day CARE is doing our best to help find a profitable path forward. It is rewarding to work with such a committed community of entrepreneurs on a daily basis.

The progress we have made together is in no small part a result of our dedicated Board of Directors. Their commitment of time and energy makes my job rewarding, as we tackle the challenges in a professional and productive manner. CARE is fortunate to have a strong and talented team.

Sincerely,

Robert Peoples, Ph.D.
Executive Director, CARE
Key Results for CARE in 2015


CARE continued to grow as an organization in 2015 with the launch of the carpet industry funded Voluntary Product Stewardship (VPS) program and the continued management of the California AB 2398 statute. The VPS program launched on January 1st, 2015 with an annual budget of $4.5 million. Feedback from the field indicates this initiative has been well received and is making a significant difference for our collector/sorter community. CARE continues to serve as the carpet stewardship organization (CSO) that manages and implements our CA Plan. On April 1, 2015, the assessment increased in California from 5 cents to 10 cents per square yard, thus increasing CARE’s fiduciary responsibility. The CARE organization is now responsible for administration of a $15 million operational budget.

CARE underwent a series of three independent audits in 2015. The first was an audit of CARE core operations. The second was an audit of our AB2398 financials. Finally, we received a performance audit as required by CalRecycle. That is an audit regarding the requirements of the AB2398 statute relating to reporting and accomplishments. There were no material findings for CARE under any of the audits performed. CARE has now had audits performed in 2013, 2014, and 2015 with no material findings. This is a testament to CARE’s financial structure and internal controls.

CARE Operations

The financial operations of CARE are managed separately from its other programs. The operations of CARE have a separate and distinct financial ledger, budget, income statement, and balance sheet as does the VPS and AB2398 programs.

The 2015 Annual Report provides a complete financial statement and summary of operations for CARE only. Please see the separate 2015 Annual Report for details on the CA Program.

CARE Operations Income and Expense Statement

- Net Income (revenues minus expenses) through December 2015 was $98,305.
- Expenses were under budget for the year while revenue was above budget.

CARE Operations Balance Sheet:

- Cash balance at end of December 2015 was $306,647 vs. $314,219 at the end of 2014.
- Members’ equity was $381,208, down by $12,000 from $393,060 in December 2014.
- CARE maintains a minimum annual $275,000 cash reserve.
Business Results, 2015

- In 2015, CARE finished the year with 181 members.
- CARE successfully managed the California AB 2398 program as the Carpet Stewardship Organization.
- CARE launched and successfully managed the Voluntary Product Stewardship Program in 2015.
- CARE released a $500K grant to the University of Connecticut. Project: Value-Added Uses for PET Derived from Post-Consumer Carpet. This grant was funded by AB2398 dollars.

2015 CARE Annual Survey Results of the U.S. Carpet Recycling Industry

- Employment increased from 1,163 in 2014 to 1,295 in 2015, an increase of 11%.
- Total post-consumer carpet discards, based on sales, were estimated at 3.4 billion pounds.
- Post-consumer carpet discards were estimated at 10.6 pounds per capita in 2015.
- Total gross collections were 520 million pounds, up from 494 million pounds in 2014.
- Gross post-consumer carpet collection equated to 1.6 pounds per capita for 2014.
- Gross recycle ratio (gross collected/total discards) was 15%. This ratio increased 1% from 2014.
- Post-consumer carpet Nylon fiber represented 61% of the collection stream, unchanged from 2014.
- Total Materials flows were as follows:
  - Recycled Output (reuse plus recycle) was 23%
  - Waste-to-Energy (WtE) represented 13%
  - CAAF and kiln output reported at 23%
  - 65% of recycled materials went to resin and molding applications.
  - Carpet face fiber use was 13% of recycled output
  - Carpet backing use was 8%
  - Other applications represented 14% of recycle uses.
- 98% of the post-consumer carpet collected was processed in the United States.
- 90% of respondents felt CARE is meeting their business needs, down from 91% in 2014.
- Since it was founded in 2002, CARE members have diverted over 4.2 billion gross pounds of post-consumer carpet from landfills in the United States.
- Greenhouse gas equivalents saved was calculated to be 98,444 mTCO2E using the 2016 EPA WARM model: [www.epa.gov/warm/versions-waste-reduction-model-warm#WARM Tool V14](http://www.epa.gov/warm/versions-waste-reduction-model-warm#WARM Tool V14)
- GHG savings is equivalent to enough energy to power 20,218 homes for the year and conserving 518,000 gallons of water
California AB2398 Results for 2015

This past year was by far the most dynamic in terms of fluctuating market conditions and industry challenges which combined to slow collection and recycling rates. Market conditions stagnated due to the following macroeconomic and industry factors:

- The drop in prices in global oil markets resulted in the gap shrinking between the cost of virgin materials and recycled output, making virgin materials far more attractive. Low oil prices are expected to continue for an extended period of time causing future market destabilization.
- A significant market shift from more expensive nylon carpet to less expensive PET carpet drove a sharp increase in the volume of non-nylon discards as a portion of waste stream and a corresponding decline in nylon. PET materials are historically harder to recycle compared to nylon as there are limited markets.
- Labor disputes resulted in a West Coast port slowdown halting the movement of goods in early 2015 and leading to prolonged slow movement of goods throughout the first half 2015.
- Demand from Asia, especially China, declined unexpectedly, due to an economic downturn and new import laws (‘green fence’). China has historically been a significant purchaser and user of recycled carpet materials.
- The pricing for commodity materials dropped significantly during 2015, resulting in a slowdown across the recycling industry as a whole. Plastics, for example, are down 4.5% in volume and 9% in price.
- Within California, a downsizing in processor capacity occurred as a result of the recycling industry downturn described above. Razor-thin profit margins and non-diversified business models make survival difficult for many processors, collectors, and sorters during stagnant markets; and
- The shutdown of a large non-California nylon carpet processor in Q3 2015 resulted in a corresponding loss of 100 million lbs. of capacity. Coupled with a delay in the opening of a new facility, this capacity loss curtailed the movement of historically strong nylon markets.

These dynamic market conditions and macroeconomic challenges resulted in a contraction in the market in 2015. The perfect storm of global macroeconomic and industry conditions caused a drop in both gross collections and recycled output compared to 2014. Graph format below is messed up
Although these macroeconomic factors are outside the direct control of the California Program, the Program took swift action to address the stagnating market. Two assessment increases (one implemented Apr. 1, 2015, and the second proposed to CalRecycle by the Program in Nov. 2015 to take effect in 2016) gave the Program the funds to enact both short- and long-term strategies to respond to these conditions.

Several short-term strategies were put in place, such as creating new and increasing existing incentives on hard- to-recycle materials (PET and calcium carbonate), an increased base subsidy (tied to market conditions) to support all material types and offset declines in the nylon marketplace, a change from quarterly to monthly payouts to improve cash flow for program participants, as well as the addition of resources to both expand the network of county drop-off sites and increase the number of manufacturers utilizing California post-consumer carpet recycled output.

**VPS Program**

The VPS Program began in January of 2015 and was designed to run for two years. The VPS Program is market-based and designed to accept and manage all applicable post-consumer carpet, regardless of polymer type or primary materials or construction. The Program is funded by members of the Carpet and Rug Institute. The VPS program incentivizes sorters of post-consumer carpet who ship and sell material to processors. The program’s budget for 2015 was $4.5 million, all of which was used in the first year. The program was approved for 2016 with a financial commitment of $4.5 million.

2015 presented major challenges for CSEs. The low prices of oil, accompanied by a shortage or market outlets, resulted in a challenging year for those in the industry. The VPS Program assisted CSEs in improving their business results in a tumultuous time. The graphs below represent quarterly results from 2015.
Table 1: VPS Output Destinations

<table>
<thead>
<tr>
<th>Pounds of Output</th>
<th>Q1 2015</th>
<th>Q2 2015</th>
<th>Q3 2015</th>
<th>Q4 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadloom Re-Used ($0.02)</td>
<td>1,662,222</td>
<td>2,514,473</td>
<td>80,000</td>
<td>-</td>
</tr>
<tr>
<td>Carpet Tile Re-used ($0.02)</td>
<td>639,206</td>
<td>550,980</td>
<td>559,536</td>
<td></td>
</tr>
<tr>
<td>Shipped Internationally ($0.02)</td>
<td>3,576,893</td>
<td>1,403,553</td>
<td>79,004</td>
<td>841,259</td>
</tr>
<tr>
<td>Shipped inside U.S. ($0.02)</td>
<td>62,764,138</td>
<td>65,385,512</td>
<td>59,557,428</td>
<td>46,690,476</td>
</tr>
<tr>
<td>Waste-to-Energy ($0.01)</td>
<td>5,501,436</td>
<td>6,243,524</td>
<td>6,015,714</td>
<td>7,892,383</td>
</tr>
<tr>
<td>Pyrolysis ($0.01)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cement Kiln ($0.01)</td>
<td>1,444,065</td>
<td>1,583,132</td>
<td>2,481,035</td>
<td>1,068,195</td>
</tr>
<tr>
<td>CAAF ($0.01)</td>
<td>1,648,083</td>
<td>1,262,845</td>
<td>2,732,455</td>
<td>1,162,065</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>76,596,837</strong></td>
<td><strong>79,032,245</strong></td>
<td><strong>71,496,616</strong></td>
<td><strong>58,213,914</strong></td>
</tr>
</tbody>
</table>

The VPS Program funds two types of output: Type 1 and Type 2. Material that is re-used, shipped internationally and shipped inside of the U.S. is considered Type 1 and is funded at $.02 per pound of output. Material that is sent to a waste to energy facility, a pyrolysis application, cement kiln, and CAAF is considered Type 2 and is funded at $.01 per pound of output.

Table 2 breaks down the output by fiber type. CARE feels that this represents the demand for various fiber types in the marketplace. While Table 1 shows that the amount of output decreased throughout 2015, the marketplace demand in regards to fiber type preference remained consistent. Nylon 6 represented the largest amount of sorted output in 2015, but there are concerns that this demand will decrease in 2016 due to lower oil prices and the over-supply of caprolactam coming out of China.

Table 2: Face Fiber Breakdown – Shipped and Sold

<table>
<thead>
<tr>
<th>Face Fiber Breakdown - Shipped and Sold</th>
<th>Q1 2015</th>
<th>Q2 2015</th>
<th>Q3 2015</th>
<th>Q4 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nylon 6</td>
<td>47%</td>
<td>45%</td>
<td>53%</td>
<td>48%</td>
</tr>
<tr>
<td>Nylon 6,6</td>
<td>23%</td>
<td>21%</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>Wool</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Modular Carpet Tile</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>10%</td>
<td>8%</td>
<td>10%</td>
<td>11%</td>
</tr>
<tr>
<td>PET/PTT</td>
<td>20%</td>
<td>23%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>Other/Mixed Fibers</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
</tr>
</tbody>
</table>
CARE 2015 Annual Survey Results

Each year, as required by the CARE Bylaws, CARE prepares an Annual Survey to report on carpet diversion and recycling results achieved by the respondents to the Annual Survey. All information from respondents is confidential. The collected information is aggregated and analyzed for the Annual Report.

2015 Carpet Recycling Industry Landscape

2015 was a year filled with both changes and challenges for CARE. The organization’s fiscal responsibility expanded greatly due to the launch of the Voluntary Product Stewardship program and the increased assessment fee from $.05 to $.10 for the AB 2398 program. A continued increase of polyester fiber into the waste stream and macroeconomic issues hindered growth in the carpet recycling industry in 2015. The drop in oil prices in 2015 resulted in a drop in virgin materials, resulting in a decreased demand for recycled materials. Additionally, the demand for nylon 6 fiber decreased greatly due to a major reduction of processing capacity in the industry. This resulted in many collectors and processors either going out of business or decreasing carpet recycling activity.

Annual Survey Methodology

In order to form a complete picture of the national Carpet Recycling Industry, respondents were asked questions regarding the following issues on the Annual Survey:

- Recycled output pounds
- Recycling versus other end-uses for the material diverted (i.e. reuse, end-product manufacturing, carpet as alternative fuel (CAAF), cement kiln, waste-to-energy, and landfill)
- Types and amounts of carpets recycled, by fiber type
• End products manufactured from recycled materials
• Steps in the recycling process performed by the respondent
• Geographical locations and employment information
• International versus domestic customers (outlets)

In addition to the quantitative information sought, CARE also requested input on the organizations performance and the value of CARE to respondents. This information is used to improve CARE’s operations and resources.

For the 2015 CARE Annual Survey, CARE developed two surveys targeted at different parts of the supply chain. CARE had collected data throughout the year in its management of the Voluntary Product Stewardship and AB 2398 programs. The surveys were designed to account for missing information in the mass balance analysis.

The first survey was sent to Collectors and Sorters. Almost all of the CSEs in the United States participate in the Voluntary Product Stewardship and report their numbers on a quarterly basis, so CARE already had the majority of information required. The survey was sent to 60 CSEs; 22 completed the survey for a response rate of 36%.

The second survey was directed to companies that process the carpet and/or use post-consumer carpet material in a product. This survey was sent to 15 processor and manufacturers across the US. All recipients of the survey responded.

A copy of both 2015 surveys are attached at the end of the Annual Report in Appendix 1.

CARE assessed the responses received and followed up as needed with individual companies to maximize participation and to ensure that it minimized double-counting wherever possible. By doing so, the reported data is more accurate and reflects a truer picture of the amount of carpet diverted and recycled in 2015. CARE wishes to acknowledge the support of Dr. Matthew Realff of the Georgia Institute of Technology for his assistance in evaluating the data.

CARE makes no warranty as to the accuracy of this data and assumes no responsibility or liability for how this information is used by individuals or companies and makes no warranties for its use.

Evaluation of Progress in 2015

Carpet Discard Methodology

In 2011, the CARE Board of Directors adopted a formula for calculating carpet discards, which more accurately reflects actual sales and carpet discards in the United States. CARE believes the formula provides a more accurate picture of both gross collections and recycling rates for annual reports. In the
fall of 2012, CalRecycle agreed to the use of this formula for calculations involving post-consumer recycling in California.

The purpose of the methodology is to update the discards on an annual basis, using actual sales data, and upgraded by factors that influence the calculation. Those factors include changes in imports/exports, percent of the market that is replacement, average face weight, deselection, and demolition rate.

Formula for Calculating Carpet Discards
The approved formula for calculation of discards is:

\[ \text{Discards} = (((\text{Sales} \times R) \times P) + D + DS) \]

The factors used to calculate the amount of carpet available for diversion include:

- **S** = Carpet Sales in the US for the reporting period (square yards)
  - Sales Data comes from Market Insights, an independent market research firm, who is collecting the confidential sales data from carpet manufacturers doing business in the US.

- **R** = Percent of carpet that is replacement, or carpet replacing existing carpet.
  - Replacement carpet is the carpet destined for the landfill. The carpet industry has worked with Market Insights to quantify the replacement rate to be 82% currently.

- **P** = Average weight of carpet per square yard.
  - In 2012, the average weight was 4.2 pounds/square yard and this number was reconfirmed in 2013. (Raw data was supplied by the industry and analyzed by CARE. Weighted averages of carpet weights of broadloom and tile used in the commercial and residential sectors were calculated.) A new carpet weight analysis was conducted in 2016. The average weight of 4.4 will be used moving forward.

- **D** = Pounds of carpet from demolition projects not replaced.
  - In 2015, the weighted demolition rate (85% residential and 15% commercial) was estimated at 0.60%, (estimate provided by Market Insights). D is converted to pounds by multiplying Sales x R x P.

- **DS** = Deselection pounds resulting from a decision to rip out old carpet and not replace it with new carpet. The overall deselection estimate is ca. 0.75% per year.

Note that the term demolition represents the teardown of a building. There is no easy way to know the actual square yards of carpet coming out of such a process. By assuming the actual demolition rate obtained from Marketing Insights we are likely overestimating the total volume of carpet sent to
landfill. However, this is a tiny fraction (<1%) of the overall amount and does not significantly alter the flow.

Deselection is a separate element of the PCC flow to landfill. CARE has always assumed this parameter to be very small (<1%). CARE worked to develop a more quantitative estimate of deselection in 2015. Based on an analysis of historical data back to 1975, in 5 year increments, it is estimated that deselection represents <0.75% per year. Based on 2015 total estimated discards of 3.43 billion pounds, deselection equates to an estimated 25 million pounds.

It should be noted that both demolition and deselection estimates are well within the error associated which our discard and recycle estimates.

Application of the formula to generate discards is shown in the following example using actual U.S. data from 2015 and rounded for clarity.

\[
\text{Discards} = \left(\left(\text{Sales} \times R\right) \times P\right) + D + DS
\]

Sales 2015: 1.01 Billion square yards

Discards \(= (1,019 \times 0.79) \times 4.2 \times 3,381 \text{ million pounds} + D + DS\)

Where \(D = 3,381 \times 0.006 = 20 \text{ million pounds}\)

Where \(DS = 3,381 \times 0.0075 = 25 \text{ million pounds}\)

Thus, Discards \(= 3,381 + 20 + 25 = 3,426 \text{ million pounds}\)

**Post-Consumer Carpet Collection and Recycling: Quantitative Results for 2015**

CARE continues to work to quantify metrics necessary to understand the marketplace for carpet recycling in the United States. It is important to recognize that CARE discloses and works with the data as received. These numbers have been voluntarily given to CARE by the independent post-consumer carpet sorters and processors that are members of CARE. CARE has not audited the numbers nor does CARE guarantee the accuracy of the numbers submitted. Key results include:

- 520 million pounds of gross collected post-consumer carpet in 2015 = Diversion Rate of 15%.
- 173 million pounds of post-consumer carpet was recycled in 2015, a recycling rate of 5%
- Recycled output yield was 32% (Output/gross collection)
- 4.2 billion Pounds of cumulative diversion since 2002.

Table 3 shows a comparison by pounds and percentage of the quantity of post-consumer carpet recycled and diverted from landfill since program inception in 2002 through 2015. CARE began using
the new methodology for measuring carpet discards and a mass balance calculation of input based on measured pounds of outputs in 2013.

Table 3: Post-Consumer Carpet Recycling and Diversion Statistics, 2002-2015

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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Discards</td>
<td>4,409</td>
<td>4,396</td>
<td>4,588</td>
<td>4,916</td>
<td>4,687</td>
<td>4,560</td>
<td>4,228</td>
<td>3,718</td>
<td>3,373</td>
<td>3,816</td>
<td>3,540</td>
<td>3,703</td>
<td>3,426</td>
<td>3,427</td>
</tr>
<tr>
<td>Reuse</td>
<td>0</td>
<td>0</td>
<td>0.3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>12</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>Total Recycled</td>
<td>46</td>
<td>87</td>
<td>98</td>
<td>194</td>
<td>239</td>
<td>275</td>
<td>243</td>
<td>246</td>
<td>271</td>
<td>250</td>
<td>294</td>
<td>185</td>
<td>124</td>
<td>157</td>
</tr>
<tr>
<td>Total Reuse + Recycle</td>
<td>55</td>
<td>87</td>
<td>98.3</td>
<td>194</td>
<td>239</td>
<td>275</td>
<td>243</td>
<td>246</td>
<td>271</td>
<td>250</td>
<td>294</td>
<td>185</td>
<td>124</td>
<td>157</td>
</tr>
<tr>
<td>Waste-to-Energy</td>
<td>1.9</td>
<td>7</td>
<td>9</td>
<td>27</td>
<td>21</td>
<td>19</td>
<td>41</td>
<td>47</td>
<td>38</td>
<td>46</td>
<td>42</td>
<td>58</td>
<td>41</td>
<td>68</td>
</tr>
<tr>
<td>CAAF or Cement Kiln</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>12</td>
<td>26</td>
<td>36</td>
<td>11</td>
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<td>113</td>
<td>120</td>
</tr>
<tr>
<td>TOTAL Diverted</td>
<td>57</td>
<td>94</td>
<td>108</td>
<td>224</td>
<td>260</td>
<td>296</td>
<td>290</td>
<td>317</td>
<td>337</td>
<td>333</td>
<td>352</td>
<td>534</td>
<td>494</td>
<td>520</td>
</tr>
<tr>
<td>Recycling Rate</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>4%</td>
<td>5%</td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
<td>8%</td>
<td>7%</td>
<td>8%</td>
<td>5%</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Gross Diversion Rate</td>
<td>1%</td>
<td>2%</td>
<td>2%</td>
<td>5%</td>
<td>6%</td>
<td>6%</td>
<td>7%</td>
<td>9%</td>
<td>10%</td>
<td>9%</td>
<td>10%</td>
<td>14%</td>
<td>14%</td>
<td>15%</td>
</tr>
</tbody>
</table>

The mass balance of outputs method, Figure 3, assumes the sorters and processors accurately know their weight of goods sold and shipped to customers, landfill, WtE or kilns since there are profits or costs associated with these shipments. Reported pounds received on the front end are considered gross estimates since most loads are NOT weighed. Therefore, by adding everything that goes out, one can, with better accuracy, measure what came in. CARE has been able to close the gap between directly reported gross collections and using the mass balance approach to within approximately 10%.

Figure 3: Mass Balance Approach to Estimating Gross Collection in 2015
Figure 3 represents the historical trend of gross pounds of post-consumer carpet collected each year since 2002. Using the mass balance approach, gross collection for 2015 is calculated to be 520 million pounds. Please note that CARE began using the mass balance methodology in 2013. This explains the large jump from 2012 to 2013. Cumulative diversion from landfill since CARE’s inception totals 4.2 billion pounds.

Figure 4: Historical Post-Consumer Carpet Diversion, 2002-2015

Figure 5 represents the next step in the chain. After the post-consumer carpet is brought to a sorting facility, it is then sent to a processor. Of the pounds collected and sorted in 2015, 31% was sent to the landfill. This number is 14% lower than 2014. The amount of material sent to recycling processes increased from 23% in 2014 to 30% in 2015. CARE believes that the changes are due to challenging market dynamics mentioned earlier (oil price fluctuations, international demand, carpet fiber preferences). Collectors and sorters are now more selective about the material they’re bringing in, meaning that only the valuable fiber types are entering the system, thus driving the landfill percentage down and the recycled percentage up.

For historical data, the reader is encouraged to visit https://carpetrecovery.org/newsblog/reading-room/.
End Products Manufactured from Post-Consumer Carpet

Respondents reported that 65% of recycled post-consumer carpet is manufactured into engineered resins. After several years of decline in this category, this is an increase from 46% in 2015.

Like 2015, 21% of post-consumer carpet pounds that were recycled went into new carpet (13% into fiber; 8% into backing) – a true cradle-to-cradle process.
International Markets for Post-Consumer Carpet Material

In 2015, the US consumed 98% of the post-consumer carpet material collected. This has increased from 92% in 2014. This is the result of decreased demand from Asia, particularly China. China has historically been a significant purchaser and user of recycled post-consumer carpet, but new import laws have resulted in less material being shipped.

Nylon 6 and Nylon 6, 6 Fibers Were 62% of the Fiber Type Sorted in 2014

The CARE survey included information on the types of carpet face fiber collected or sorted by Survey respondents. Each respondent reports the percentage fiber type breakdown. It’s become apparent in the past few years that many large collectors have refined their collection models to reduce or eliminate the amount of PET that enters their facilities. This means that the percentages in figure 7 does not accurately represent the waste stream, only what was brought into sorting facilities.

In 2015, Nylon 6 and Nylon 6,6 fibers accounted for 62% of the total sorted carpet fiber. Both fiber types were about evenly distributed at 32% and 30% respectively. This represents a decrease in the demand for N6 and an increase in the demand for N6,6. Macroeconomic changes have had an impact on the price of virgin materials, often making them less expensive to produce than recycled goods. Changes in processing methods also had a direct impact on the demand for certain fiber types.

Demand for Nylon 6 began to drop sharply in the second half of 2015. CARE anticipates this trend continuing in 2015.

PET percentage was 24%, down one percentage point from 2014. As collectors continue to refine their collection models to minimize the amount of PET, that number is anticipated to decline. Polypropylene represented 11% of what was collected in 2015, up from 4% in 2014.

![Figure 7: Post-Consumer Carpet Fiber Type, 2015](image)

**NOTE:** N66=Nylon 6,6; N6=Nylon 6; PP=Polypropylene; PET=Polyethylene terephthalate
For historical perspectives, Figure 8 shows the shift in carpet face fiber from 2008-2015. The chart shows the growth of PET fiber in post-consumer carpet collection. While 2014 and 2015 represent a decrease in the amount of PET collected, it should be noted this decrease is a result of collectors finding ways to minimize the amount of PET carpet that is collected. The amount of PET carpet that is sold in the marketplace continues to grow, which means that more PET fiber will find its way into the waste stream in the coming years.

**Figure 8: Post-Consumer Carpet Fiber Type Collection Trends, 2008-2015**

![Graph showing fiber collection trends](image)

Market fluctuations present big challenges for those in the carpet recycling industry. Many companies are having to refine business models to simply survive in the tumultuous environment. For example, with the increase of PET into the waste stream, the collector now has increased landfill costs because of the lack of viable end markets. Some collectors have stated that their waste costs have doubled and tripled in the past few years. Profitability is also decreased as there is less nylon is the waste stream, and the amount that exist is losing its value. PET is expected to continue to grow in the coming years. Some estimate that PET will grow to over 50% of the waste stream in the next few years. CARE does not see a viable market for PET fiber at this point, but the organization has taken many steps in an attempt to find market-based solutions in these challenging times.

**CARE Carpet Recycling Survey Respondents Employed an estimated 1,295 People in Local Communities across the U.S. in 2015**

The respondents to the CARE Annual Survey employed 1,295 people in local communities in 2015, an increase of 132 people or 11% versus 2014. CARE received an influx of new members (30) in 2015 due to the Voluntary Product Stewardship Program. The employment numbers from these companies were not included in previous reports.
Collection of Carpet by Region

Figure 10 show where respondents collected carpet, by region.

Figure 11 shows that post-consumer carpet collection is highest in the Southeast (38%), followed by the Midwest (20%), the Southwest (19%), California (14%), and Northeast and Northwest (each 5%).
Qualitative Feedback from CARE 2014 Survey Respondents

In the 2015 survey, 90% of respondents (n=33) said CARE was meeting their needs. This is slightly down from 91% in 2014. CARE continues to look for ways to increase value and support for its members.

Figure 12: Survey respondents’ view of whether CARE is meeting their needs
Summary

- CARE used the mass balance approach for the third consecutive year. Changes were made to the surveys based on the information needed for the mass balance analysis. Since CARE had already collected data throughout the year, the surveys targeted missing data from the analysis.
- Challenges persist in the marketplace. Many collectors and sorters are struggling in current economic conditions.
- Engineered resins rebounded in 2015 and represents 65% of recycled output for 2015.
- Once again it should be noted that there is a significant level of “closed loop recycle” of post-consumer back into carpet. In 2015, this outlet remained constant at 21%.
- The data shows PET face fiber collection decreased in 2014 and 2015. This is believed to be a direct result of selectivity by collector/sorters due to a lack of outlets for this material. This is expected to continue and could impact other fiber types if conditions don’t improve.
- The demand for Nylon 6 began to decrease in the second half of 2015. This is forecasted to continue into 2016 based on feedback from collectors and sorters.
- International activity continued to decrease due to drop in demand in Asia.

Survey Methodology

In developing a survey methodology to establish quantitative estimates of recycling of a particular waste stream, two key factors must be taken into account: 1) participation and 2) double-counting. Participation is essential in any surveying process, and even more so in this type of survey, where there is no logical or reliable way to extrapolate results from respondents to the general population. This means that respondents’ survey responses will represent the complete and total results. Thus, every effort must be made to maximize participation.

However, with increasing participation comes another potential problem: double-counting. Since a given pound of used carpet may pass through several different entities on its way from the point of generation to its ultimate disposition (reuse, recycling or disposal), and, since all of these different types of entities (collectors, sorting facilities, processors and manufacturers) are included in the survey, the chance exists that the same pound of carpet could be counted more than once. As participation increases, the likelihood of double-counting increases, since there is a greater chance that more than one company may be reporting on their handling of the same material. Design and analysis of the survey data are built to help minimize this concern.

A number of features were built into the surveying process to address these two key issues:

Confidentiality of data is often the key to participation, and all aspects of the survey were designed to preserve confidentiality. In particular, once again a web-based surveying tool was used to allow respondents to provide data completely anonymously, if they desired. In addition, all written and verbal communication with potential survey respondents stressed the confidentiality of data.
Simplicity and ease of response was also a key to participation rates. The survey questions were streamlined to the maximum extent possible so that only the most critical data were included, based upon the philosophy that it is much better to have the basic data from many respondents than detailed information from a few (particularly since there is no basis for extrapolation).

Participation rates can also be boosted through the use of multiple means of contact (as well as repeated contacts). Thus, extensive e-mail and telephone communications were used to contact survey respondents. Every effort was made to include new participants, as they became known to CARE.

To reduce the chances of double counting, survey respondents were asked to identify the geographic sources of their material to the extent they were known. If there is information from two or more companies that might reflect handling of the same material, the geographic sources of these companies could be reviewed to determine if that was likely.

In another attempt to reduce the chances for double counting, survey respondents were asked about the type of companies that received the material their company shipped out. This information not only allows for identification of possible double counting, but also serves to provide a more complete picture of the overall flow of post-consumer carpet through the collection and recycling process. In some cases, receiving companies are contacted to verify numbers.

With those basic principles in mind, the surveying process was implemented, using the steps outlined below, which are described in general chronological order:

1. The survey used in the 2015 was updated based on respondents’ feedback from last year in an effort to shorten the survey. The 2015 survey form is shown in Appendix 1.
2. The survey was web-based and results were password protected and available solely to two CARE staff to preserve confidentiality.
3. Based upon past experience with this survey process, the survey was focused on those companies for which specific individuals have been identified as points of contact.
4. Companies with specific contacts and e-mail addresses were notified via e-mail and were provided the survey URL so that they could respond electronically. A total of about 20 different companies were sent e-mail notifications of the survey (more than one individual was contacted from an individual firm in several instances). The e-mail notification stressed the confidentiality of the information they were asked to provide.
5. Approximately two weeks after the initial e-mail was sent, follow-up activities were initiated. These included e-mails to those companies that had not responded, as well as telephone calls to prompt responses and answer questions some potential respondents had raised.
6. All survey responses were reviewed for any inconsistencies or unclear responses. The survey responses were also reviewed to determine if there were any questionable responses (e.g. data that appeared to be off by orders of magnitude with regards to company size). Where there was some question about the responses provided and the respondents had provided their
names (respondents can choose to respond entirely anonymously), follow-up was attempted to clarify the responses. In most cases these efforts were successful.

7. Data were transferred to a spreadsheet-based database. This database contains all of the quantitative responses, as well as summaries of any descriptive information provided by the companies.

8. Data to eliminate potential double counting was received and appropriate adjustments made to the data compilations where/when necessary.

9. The data were compiled and analyzed to produce the results described herein. CARE acknowledges Dr. Matthew Realff for his assistance in the logistics analysis and mass balance calculations.

10. Efforts to maintain consistency year to year are considered important to plot trends and look for patterns.

Assessment of Survey Approach and Results

As noted previously, there are three key factors that led to the conclusion that this year’s survey results are high in quality (i.e. believed to be more representative of real-world conditions):

1. Response rate was again very high, meaning that a greater proportion of the total number of companies involved in post-consumer carpet recycling responded by submitting survey results.

2. CARE had already possessed a large part of the data through the management of the Voluntary Product Stewardship and AB 2398 Programs.

3. Manufacturers who use the material within their own manufacturing process, handled a significant portion of the post-consumer carpet. This eliminated the possibility for double counting of this material.

For these reasons, double counting does not appear to be a significant issue with the data presented in the 2015 CARE Annual Report.
CARE Outreach Results, 2015

14th Annual CARE Conference
In 2016, members and colleagues of CARE gathered at its 14th Annual Conference, in downtown Greenville, SC in early May. The conference format included a one-and-a-half-day event followed by a half day for entrepreneurs only. The venue provided for business interactions, including with vendors/exhibitors. CARE also recognized the outstanding individuals and companies who made significant contributions to the CARE organization during the year. The following awards were given:

2015 Recycler of the Year – Aquafil

Aquafil’s reclamation of post-consumer carpet is a first step in the ECONYL® Regeneration System, which creates recycled nylon 6 fibers from post-consumer carpet in a continuous production cycle. Aquafil’s process transforms the nylon 6 back into raw material without any loss of quality.

CARE Executive Director Bob Peoples (left), Jim Lindsey of Aquafil, and CARE Chairman Brendan McSheehy
2015 CARE Person of the Year - Rocky Ponders and Robert Goldberg

Rocky Ponders and Robert Goldberg, Columbia Recycling Corporation, were named 2015 CARE Persons of the Year. These two outstanding individuals transformed their company’s business model, expanding post-industrial and post-consumer carpet recycling over the past 36 years. As a result, they increased employment from fewer than 25 employees to over 500 people. Rocky and Robert led the company’s growth into production of melt filtered pellets for the compounding industry, and the production of carpet cushion manufacturing, using recycled carpet components.

Rock Ponders (center) accepts the CARE Person of the Year Award from CARE Board Member Fred Williamson (left, 2014 winner) and Executive Director Bob Peoples (right)

“CARE is pleased to recognize Rocky and Robert’s leadership of Columbia Recycling Corporation. Over the years, these two innovators have led their company to divert significant amounts of carpet from landfills across the USA, through innovations in process technology, equipment design and product development”, says Robert Peoples, Executive Director of CARE. “We especially want to recognize Rocky, as he retires from the day-to-day operations of Columbia Recycling, and wish him all the best in his new efforts to further develop the carpet cushion business.

CARE Website Traffic

CARE’s website, www.carpetrecovery.org, underwent a major overhaul in 2014. The newly designed website was introduced at the spring annual meeting in May of 2014. Thus 2015 is the first time CARE has had a whole year’s worth of data for the new website. The following charts provide a general overview of website activities.
Figure 15: CARE AB 2398 Webpage Visits, 2015

![AB 2398 Page Visits Graph]

Figure 16: New vs. Returning Webpage Visitors, 2015

![New vs. Returning Users Pie Chart]
Appendix 1
CARE America Recover Effort (CARE) Survey 2014

2015 CARE Annual Survey

1.

Dear CARE Carpet Reclamation and Recycling Partner,

Thank you for taking the time to complete the 2015 Carpet America Recovery Effort (CARE) Annual Survey. Your complete answers to this survey will allow us to perform quantitative analysis on the carpet recycling stream and create a detailed Annual Report for the stakeholders of CARE.

Please report only the quantity of post-consumer carpet managed through your business. For purposes of the CARE Annual Report, we will NOT include information on post-industrial carpet, ONLY POST-CONSUMER CARPET.

The survey should take less than 20 minutes to complete. To minimize the amount of time spent on completing the survey, we recommend that you read through the survey and have your data available before completing the survey.

If you need any assistance or have questions while completing this survey, please contact Anthony Cline, CARE's Operations Director, at acline@carpetrecovery.org or 706-428-2127.

Due to the time sensitive nature of this survey, please complete the survey by close of business on Friday, February 26, 2016.

Note - All Company information and answers to this survey will be CONFIDENTIAL, and will only be seen and used by CARE's Executive Director and Operations Director.

All data collected will be reported in the aggregate, thus removing any references to individual companies.

Thank you

Bob Peoples
Executive Director, Carpet America Recovery Effort (CARE)

* Of your total employees, how many are specifically associated with the diversion/recycling of post-consumer carpet?

* Please select the type of company from the list below, based upon the descriptions provided. If your company performs more than one function, check all boxes that apply.

- Collector - A company that consolidates and temporarily stores recovered commercial and/or residential carpet.

- Sorting Facility - A facility that segregates collected carpet into the various backing types (PVC, SBR Latex, etc.) and/or fiber types (e.g., Nylon 6, Nylon 6.6, Polypropylene and Polyester).

- Processor - A company or facility that receives post-consumer carpeting (whether handled by a sorting facility or brought directly by a collector) and processes it for use as a feedstock in a manufacturing facility.

- Manufacturer - A company or facility that utilizes processed carpeting materials and transforms them into other products, or uses them as raw materials in a manufacturing process.
Included is a flow chart that represents the various stages of the carpet recycling process. This will be used throughout the survey.

**Definitions**

**Carpet as Alternative Fuel (CAAF):** Fuel that has been produced from source-separated carpet and processed, including (1) extraction of components if at all possible; (2) size reduction, shredding, and/or blending with coal fines, etc.

**Cement Kiln:** Cement production facility that may use CAAF as a source of energy and/or as an additive for cement production.

**Incineration:** Complete burning of material to ashes, with no energy recovery.

**Landfilling:** Landfilling includes the placement of post-consumer carpet and/or the residuals from a post-consumer carpet management method into a landfill disposal facility.

**Reuse:** Refurbishing and donating/selling recovered carpet back into the market for its original intended use. The reuse of recovered carpet retains the original purpose and performance characteristics of the carpet.

**Waste-to-Energy:** Process of recovering thermal energy from MSW through combustion.

**Example:** A recycling business person collects 1 million lbs of carpet. The recycler sorts and shears this material and sends it to a processor. Along the way, some of the post-consumer carpet is reused, and some is not able to be recycled, for various reasons, and is either sent to a CAAF or a cement kiln facility, waste-to-energy, or the landfill. The recycler tracks the amount of material as it progresses through the process. For this example, the recycler would answer the next questions as follows:
Please use the Processor Flow Chart to answer this question.

Example:

a. - Lbs. received from sorter
b. - Lbs of starting inventory material
   a. Pounds received from sorter
   b. Pounds of Starting Inventory
   c. Pounds to Landfill
   d. Pounds to International
   e. Pounds of Ending Inventory
   f. Pounds Reused
   g. Pounds to CAAF
   h. Pounds of Processed Fiber
   i. Pounds of Filler
   j. Pounds to Cement Klin
   k. Pounds to Incinerator
   l. Pounds to WTE

How are you handling the PET carpet you receive (outlets or landfill)?
Please use the Manufacturer Flow Chart for this question.

Example:

a. - Lbs. received from processor  
b. - Lbs. of starting inventory material

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Pounds Received from Processor</td>
<td></td>
</tr>
<tr>
<td>b. Pounds of Starting Inventory</td>
<td></td>
</tr>
<tr>
<td>c. Pounds to Landfill</td>
<td></td>
</tr>
<tr>
<td>d. Pounds to International</td>
<td></td>
</tr>
<tr>
<td>e. Pounds of Ending Inventory</td>
<td></td>
</tr>
<tr>
<td>f. Pounds Reused</td>
<td></td>
</tr>
<tr>
<td>g. Pounds to CAAF</td>
<td></td>
</tr>
<tr>
<td>h. Pounds Sent to Other Manufacturer</td>
<td></td>
</tr>
<tr>
<td>i. Pounds Used by Your Product</td>
<td></td>
</tr>
<tr>
<td>j. Pounds to Cement Kilns</td>
<td></td>
</tr>
<tr>
<td>k. Pounds to Incinerator</td>
<td></td>
</tr>
<tr>
<td>l. Pounds to WTE</td>
<td></td>
</tr>
</tbody>
</table>
This question is inquiring about the products that are manufactured using post-consumer carpet. The first blank, "a", asks for the total lbs. of material that are included in manufactured products. The entries on the right-hand side are requesting the specific numbers on the type of product was manufactured with the material.

a. Pounds of Material Used
   Overall

b. Pounds to Engineered Resin

c. Pounds Milled/Extruded

d. Pounds for Carpet Fiber

e. Pounds for Carpet Backing

f. Pounds for Carpet Cushion

g. Miscellaneous

h. Pounds for Filler

US Regional Map

Northwest (inc AK HI) ___%
California ___%
Southwest ___%
Midwest ___%
Northeast ___%
Southeast ___%
To the extent known, identify what percent of the material received came from each geographic area:

Note - Totals must equal 100%

a. California
b. Northwest
c. Midwest
d. Northeast
e. Southeast
f. Southwest

Overall, is CARE meeting your and your business’s needs?

☐ Yes
☐ No

If you answered no to the previous question, please specify where CARE can provide more support for your business.


I affirm that the answers provided in this survey are accurate and complete to the best of my knowledge.

Print Name: ____________________________
Appendix 2

Definitions Used in the CARE 2015 Annual Report

**Carpet:** A manufactured article that is used in commercial or residential flooring applications as a decorative or functional feature and that is primarily constructed of a top visible surface of synthetic or natural face fibers or yarns or tufts attached to a backing system derived from synthetic or natural materials. “Carpet” includes, but is not limited to, a commercial or a residential broadloom carpet or carpet tiles. “Carpet” does not include a rug, pad, cushion, or underlayment used in conjunction with, or separately from, a carpet.

**Carpet as Alternative Fuel (CAAF):** Fuel that has been produced from source-separated, and sorted post-consumer carpet and processed, including (1) extraction of component for recycling if at all possible; and (2) size reduction, shredding, and/or blending with coal fines, etc.

**Carpet America Recovery Effort (CARE):** A nationwide, 501(c) (3) non-profit organization whose focus is on post-consumer carpet stewardship.

**Carpet Industry:** The universe of participants involved in the production of carpet, including carpet manufacturers, fiber manufacturers, material suppliers, etc. It includes, and is not limited to members of the Carpet and Rug Institute (CRI).

**Cement Kiln:** Cement production facility that may use CAAF as a source of energy and/or as an additive for cement production.

**Collection:** Any method of consolidating and temporarily storing recovered commercial and/or residential carpet.

**Disposal Diversion:** Carpet removed from the waste stream that was destined for the landfill or incineration, for the purpose of reuse, recycling, CAAF or waste-to-energy (WtE).

**Disposal Facility:** Facilities that are licensed and permitted to provide final disposal for the specific wastes they accept, including waste-to-energy, incineration, and landfilling.

**Entrepreneur:** Individual or privately-held company who is not a carpet manufacturer, and who actively, collects, sorts, processes or manufactures products made from post-consumer carpet.

**Filler:** Materials such as calcium carbonate, etc. used in the production of carpet backing.

**Higher Value Recycling Material:** Output of the materials with the most benefits to manufacturers of finished products. Examples of higher value recycling materials include post-consumer carpet fiber, post-consumer carpet backing, engineered resins and material for carpet cushion.

**Incineration:** Complete burning of material to ashes, with no energy recovery, to reduce waste volume.

**Input:** The post-consumer carpet that is collected, sorted and readied for processing.
**Landfilling**: Landfilling includes the placement of post-consumer carpet and/or the residuals from a post-consumer carpet management method into a landfill disposal facility.

**Lower Value Recycling Material**: Output of the materials with benefit to manufacturers of finished products, but a lower value than higher value recycling materials. Examples of lower value recycling materials include carpet filler and non-functional filler.

**Memorandum of Understanding (MOU) for Carpet Stewardship**: An agreement entered into by multi-stakeholders, including carpet industry, entrepreneurs, government entities and non-governmental organizations.

**Output**: The material that results from the processing (shredding, shearing, hammer milling) of post-consumer carpet from the processor. Examples of output are: fiber, shredded carpet tile, depolymerized chemical components, and carpet filler.

**Recycled Content**: Also known as recovered material content, the percentage of material, by weight, a product is made from that has been recovered from consumers in the municipal solid waste stream (post-consumer content) plus any industrial materials salvaged for reuse (pre-consumer/post-industrial content).

**Post-Consumer Recycled Carpet Content**: The amount or percent of carpet, by weight, that is no longer used for or has served its manufactured purpose, that is incorporated into the manufacturing process of the same or a different product.

**Post-Industrial/Pre-Consumer Recycled Carpet Content**: The amount or percent of carpet material, by weight, generated by manufacturers or product converters, such as trimming, overruns, and products returned to the mills, that are incorporated back into the manufacturing process of the same or a different product.

**Post-Consumer Carpet Materials**: Carpet that has completed its life cycle as a consumer item or is no longer used for its manufactured purpose.

**Post-Industrial/Pre-Consumer Carpet Material**: Carpet materials generated in manufacturing and conversion processes, including, but not limited to manufacturing scrap and trimmings/cuttings.

**Processing**: Preparing carpet material for reuse, recycling, CAAF, WTE, or disposal.

**Recycling**: Transforming or remanufacturing discarded carpet materials into usable or marketable materials, rather than for landfill disposal, incineration, WTE, CAAF, or reuse.

**Reuse**: Refurbishing and donating/selling recovered carpet back into the market for its original intended use. The reuse of recovered carpet retains the original purpose and performance characteristics of the carpet.
**Rug:** A loose laid (not installed or attached at wall base soft floor covering manufactured from natural or synthetic fiber, including carpet cut into room or area dimensions that is not intended to cover the entire floor.

**Sorting:** The method used for segregating collected carpet into the various backing types (PVC, SBR Latex, etc.) and/or fiber types (e.g., Nylon 6, Nylon 6.6, Polypropylene and Polyester)

**Source Reduction:** The result of using less product or material in manufacturing and use of carpet, and/or reducing the amount of discarded carpet generated.

**Source Separation:** The process by which carpet is separated/segregated from all other materials at the end of its useful life (or when discarded).

**Waste-to-Energy:** Process of recovering thermal energy from solid waste through combustion.
Appendix 3
CARE Board of Directors, 2015

Brendan McSheehy, Jr. – Board Chair, Universal Fiber Systems LLC
Russ Delozier – J&J Flooring Group
Don Dolan – Masland Contract
Joe Foye – Mohawk Industries, Inc.
Sheri Gorman – RD Weis
Ron Greitzer – LA Fiber Company and Reliance Carpet Cushion
Thomas Holland – Secretary, Texas Carpet and Construction Recycling
Russell Bennett – Tandus Centiva
Dick Kruse – Kruse Carpet Recycling
Philip Ivey- Milliken
Jim Lindsey – Aquafil, Inc.
Paul Murray – Treasurer, Shaw Industries Group, Inc.
Eric Nelson – Interface
Louis Renbaum – Wellman Plastics Recycling
Bob Peoples – Executive Director, CARE
Sean Ragiel – CarpetCycle
Fred Williamson – StarNet Worldwide Commercial Flooring Partnership
Joe Yarbrough – The Carpet and Rug Institute
Stacey Washington– South Carolina DHEC

CARE Board Advisors

Frank Endrenyi, Sustainable Solutions
Dennis Hayford, Polymers Center of Excellence
Dr. Matthew Realff, Georgia Institute of Technology

About CARE

Established in 2002, CARE is a 501 (C) 3 non-profit organization. Carpet America Recovery Effort (CARE) is a joint industry-government effort to increase the amount of recycling and reuse of post-consumer carpet and reduce the amount of waste carpet going to landfills.

www.carpetrecovery.org