CARE 2017
Annual Report
# Table of Contents

- Mission Statement, Vision, and Core Values ................................................................. iv
- CARE 2017 Leaders ........................................................................................................... v
- Message from the Chairman of the CARE Board of Directors ..................................... vi
- Message from the CARE Executive Director ................................................................. viii
- Key Results for CARE in 2017 ......................................................................................... 1
- California AB 2398 Results for 2017 ............................................................................. 4
- VPS Program ..................................................................................................................... 9
- CARE 2017 Annual Survey Results ................................................................................. 14
- Evaluation of Progress in 2017 ....................................................................................... 17
- Qualitative Feedback from CARE 2017 Survey Respondents ........................................ 32
- CARE Outreach Results, 2017 ....................................................................................... 37
- Appendix 1: CARE Annual Survey ............................................................................... 44
- Appendix 2: Definitions .................................................................................................. 57
- Appendix 3: CARE Board of Directors, 2017 ................................................................. 60
List of Tables and Figures

Table 1: VPS Output Destinations ................................................................. 10
Table 2: Face Fiber Breakdown – Shipped and Sold ............................................... 10
Table 4: Region Distribution Change, 2016 vs. 2017 ............................................. 31

Figure 1: Percent of Post-Consumer Carpet Collected and Recycled ......................... 6
Figure 2: Annual Performance Trends for Gross Collections & Recycled Output .......... 8
Figure 3: CSE Output, 2015-2017 ....................................................................... 11
Figure 4: CSE Total Annual Output, 2015-2017 ..................................................... 12
Figure 5: CSE Inventory Levels, 2015-2017 .......................................................... 13
Figure 6: Mass Balance Approach to Estimating Gross Collection in 2017 .................. 21
Figure 7: Historical Post-Consumer Carpet Diversion, 2002-2017 ......................... 22
Figure 8: Outlets for Post-Consumer Carpet Collected, 2017 ............................... 23
Figure 9: End-Product Markets for Post-Consumer Carpet, 2017 ......................... 24
Figure 10: Post-Consumer Carpet Fiber Type, 2017 .............................................. 26
Figure 11: Post-Consumer Carpet Fiber Output Trends, 2008-2017 ....................... 27
Figure 12: Total Employment by CARE Survey Respondents ............................... 28
Figure 13: Reporting Regions in the United States ............................................... 29
Figure 14: Collection of Carpet by Region, 2017 ................................................... 30
Figure 15: Survey Respondents’ View of Whether CARE is Meeting Their Needs .......... 32
Figure 16: CARE Website Visits, 2017 ................................................................. 40
Figure 17: CARE Map Webpage Visits, 2017 ......................................................... 41
Figure 18: CARE AB 2398 Webpage Visits, 2017 .................................................. 42
Figure 19: New vs. Returning Webpage Visitors, 2017 ......................................... 43
Mission Statement, Vision, and Core Values

MISSION

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 2017 Leaders

SUSTAINABILITY LEADERS

Aquafil USA
Engineered Floors
Interface
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 145 members—please go to www.carpetrecovery.org for a complete list of CARE members.
Message from the Chairman of the CARE Board of Directors

The year 2017 was filled with interesting developments, many advancements in recycling technologies, and challenges with the California Carpet Stewardship Program.

Throughout the year, CARE’s Executive Director, Dr. Bob Peoples, has provided steady leadership for the organization and displayed remarkable resilience through the many issues faced throughout the year. The CARE staff have also delivered top notch financial and operational support for Bob and the needs of the organization.

After serving the CARE Board for the past several years as the Vice Chairman, it is now my privilege to serve as the Board Chairman. This also means that Brendan McSheehy has completed his service as our Chair. I would like to offer a special note of appreciation to Brendan for his tremendous leadership, his business acumen, his untiring support for the Mission and Vision of CARE, and also for his friendship! As Brendan assumes additional responsibilities at Universal Fibers, he will be replaced on our Board with someone that we all know and appreciate, Renae Anderson. As we welcome Renae with high expectations for her contributions, we will indeed miss the routine participation of Brendan, but, we know that he will always be supportive of CARE in the future.

Additionally, our newly elected Vice Chairman is Joe Foye, Mohawk Industries. Joe is involved heavily in many of the CARE Committees including the Executive Committee and the Stewardship Planning Committee. Joe is a talented attorney and has a broad perspective of the many issues that CARE faces. Also, he brings great passion and business perspective to the CARE leadership team.

I am very much looking forward with great expectations as I assume the Chairman role for CARE. My engagement and support for CARE precedes its formation almost 17 years ago! I am very passionate about the sustainability objectives that we all share. I am also pragmatic about the direction of our organization and the opportunities that we have to promote all aspects of carpet sustainability. It is my belief, that successful outcomes for CARE, its members and its mission, will come from balanced and reasonable positions on our initiatives. In my role as Chairman, I will strive to provide balanced and reasonable leadership to accomplish many successful outcomes.
I am personally very proud of the numerous accomplishments of CARE in these past 16 years. We have enjoyed great leadership from our Executive Director, and through his tireless efforts and those of his very dedicated staff, we have seen great progress this past year for CARE. The many volunteers who have served CARE as Directors, Committee Members, and Advisors should also be recognized. The commitment from these individuals, along with their drive and their passion for CARE, is the real strength of this organization. For that, I want to express a sincere note of appreciation for those legacy contributions, and, acknowledge the tremendous need for that to continue in this coming year and in the years to come!

Sincerely,

Joe W. Yarbrough
Chairman, Board of Directors
Message from the CARE Executive Director

Since our humble beginning on January 8, 2002 CARE has continued the relentless pursuit of solutions to enable the success of our members. We started with a blank sheet of paper and over the years have helped identify, enable and facilitate the development of processing equipment and technology, polymer identification technology, products and markets to create demand for post-consumer carpet recycling. Despite many ups and downs, CARE continues to help build this new industry. In the process we have had much help along the way. Our entrepreneur community, the heartbeat of CARE, have been creative, supportive and perseverant. Our Board members, advisors and volunteers have made all of the advances possible. We owe a deep debt of gratitude and thank you to every one of them.

We saw a change in our leadership in 2017 with the transition of our Board Chairman Brendan McSheehy. We lost a deep thinker and champion in Brendan, yet his commitment to the cause continues. The support of Universal Fibers, like so many of our members, is what makes the work of CARE possible. Our new leadership brings deep knowledge and understanding of our industry making it possible to continue to build on the foundation that has been laid.

The year 2017 saw many changes for CARE. I am excited to report progress on the development of new and economical technologies for the depolymerization of both nylon 6 and polyester. The CRI Voluntary Product Stewardship program continued to support our CSE community. Challenges in California remain many, but despite unforeseen developments, CARE will report a 27% increase in the recycling rate in the last year. This comes at a time when California has reported three years of declining recycle rates for the State overall. We all know as the economy and price of oil go, so goes the recycling markets in general. We have seen more than half of our national collectors either suspend or shutter operations in the last 18 months due to a lack of market outlets.

In a never-ending search for new ideas and opportunities, the 2018 conference will be the first to be held jointly with another organization – The Plastics Industry Association and their annual ReFocus plastics recycling event. We are hoping for new paths forward and forging new relationships as we work to advance this industry. For the first time in many years I am hopeful that an improving economy, rising oil prices and new technologies will allow us to open a new chapter in our quest. Some of those new technologies will allow us to once again grow the closed-loop outlets for face fiber that we lost a few years ago. This
demonstrates the on-going commitment of our entrepreneur community to make a difference for today and tomorrow. We owe them a deep debt of gratitude.

Sincerely,

Robert Peoples, Ph.D.
Executive Director, CARE
Key Results for CARE in 2017

FINANCIAL REPORT, 2017

CARE has continued to grow in 2017 and manages three distinct operations: CA Carpet Stewardship Program, The Voluntary Product Stewardship Program (VPS), and CARE Core Operations.

The VPS program launched on January 1, 2015 as a two-year program to support CSEs while solutions for PET recycling were developed. The program was renewed for 2016 with a budget of $4.0 million. Macroeconomic challenges in post-consumer carpet processing and collection dictated the need for an additional year of the VPS Program, which was approved for continuation in 2017. Market conditions continued to degrade in 2017 and resulted in a decision to continue the VPS Program for 2018. Many CSEs have altered business models and collection systems so that they could survive in this tumultuous time. That has, in turn, had an impact on the annual numbers reported to CARE.

CARE continues to serve as the carpet stewardship organization (CSO) that manages and implements its CA Plan. On April 1, 2016, the assessment increased in California from 10 cents to 20 cents per square yard. On October 1, 2017, the assessment increased to 25 cents per square yard.

As a result of these three operational areas, the CARE organization was responsible for administration of a $28 million operational budget in 2017. All three operational areas are clearly separated in terms of the accounting and auditing.

CARE underwent three independent audits in 2017. The first was an audit of CARE core operations. The second was an audit of our AB 2398 financials. Finally, we received a performance audit as required by CalRecycle. The latter is an audit regarding the performance of CARE against the requirements of the AB 2398 statute. There were no material findings for CARE under any of the audits performed and all prior findings were noted as resolved. CARE has now had audits performed in 2013, 2014, 2015, 2016, and 2017. In addition to the independent audits, CARE has been audited twice by CalRecycle and will be audited again in the fall of 2018. Since CARE began routine audits in 2013, there have been no material findings. This is a testament to CARE’s financial structure and internal controls and to the integrity of its team of dedicated staff.
CARE OPERATIONS, 2017

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 AB 2398 programs.

The 2017 Annual Report provides a complete financial statement and summary of operations for CARE only. Please see the separate 2017 California Annual Report for details on the CA Program which will be released to CalRecycle on September 1, 2018.

CARE Operations Income and Expense Statement

- Net Income (revenues minus expenses) through December 2017 was $1,520.
- Revenue was under budget by 11%. The shortfall in revenue was in large part a result of a decision by the Board, and due to the challenging market conditions, for a 90% reduction of Entrepreneur membership dues for 2017.
- Expenses were slightly under budget.
- Due to a larger than budgeted net income for 2017, the CARE Board approved another 90% reduction in the Entrepreneur’s membership dues for 2018.

CARE Operations Balance Sheet

- Cash balance at end of December 2017 was $611,920 vs. $660,368 at the end of 2016.
- Members’ equity as of 12/31/2017 was $680,596, up slightly from $679,075 at the end of December 2016.
- CARE maintains a minimum annual cash reserve of $275,000.

BUSINESS RESULTS, 2017

- In 2017, CARE finished the year with 145 members.
- CARE successfully managed the California AB 2398 program as the Carpet Stewardship Organization.
- CARE successfully managed the third year of the Voluntary Product Stewardship Program in 2017.
- CARE completed three independent audits without findings.
- CARE conducted a successful annual meeting in May 2017 and an entrepreneur meeting in the fall.
2017 CARE ANNUAL SURVEY RESULTS OF THE
U.S. CARPET RECYCLING INDUSTRY

- Employment decreased from 1,155 in 2016 to 997 in 2017, a decrease of 18%.
  - Many CSEs have ceased operation or have significantly cut their labor force
- Total post-consumer carpet discards, based on sales, were estimated at 3.3 billion pounds.
- Post-consumer carpet discards were estimated at 10 pounds per capita in 2017, unchanged from 2016.
- Total gross collections were 394 million pounds, down 19% from 489 million pounds in 2016.
  - Changing demand in fiber types have caused many CSEs to be more selective of material that’s brought into their facility
- Gross post-consumer carpet collection equated to 1.2 pounds per capita for 2017.
- Gross recycle ratio (gross collected/total discards) was 12%. This ratio decreased 3% from 2016.
- Total materials flows were as follows:
  - Recycled Output (reuse plus recycle) was 46% of gross collections
  - Waste-to-Energy (WTE) represented 12%
  - CAAF and kiln output reported at 12%
  - 81% of recycled materials went to resin and molding applications, up from 72% in 2016
  - Carpet face fiber use was 4% of recycled output, up from 3% in 2016
  - Carpet backing use was 3%
  - Other applications represented 10% the of recycle uses.
- 97% of the post-consumer carpet collected was processed in the United States.
- 92% of respondents felt CARE is meeting their business needs
- Since it was founded in 2002, CARE members have diverted over 5 billion gross pounds of post-consumer carpet from landfills in the United States.
- Greenhouse gas equivalents saved was calculated to be 175,805 mTCO₂E using the 2017 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 46,000 homes for the year and conserving over 1 million gallons of water.
In 2017, the California Carpet Stewardship Program completed six years of operations. Launched in 2011, CARE has helped California recycle nearly 250 million pounds of post-consumer carpet to date and kept more than 425 million pounds out of California landfills through recycling and other diversion efforts.

In preparation for the Program’s new 5-year Plan and in response to continued dynamic market conditions and macroeconomic challenges, the California Program adopted a series of changes in 2016 and 2017 to invest in market development by adjusting subsidies for collections, carpet tile, post-consumer carpet calcium carbonate (PC4) and Tier-2 non-nylon and nylon 6 recycled products, as well as continuing grant funding, and expanding collections, marketing, education and outreach efforts:

- CARE provides subsidies to incentivize increased reuse, recycling, diversion and recycled product development. All of the California Program’s funding is derived from the carpet assessment charged to California consumers. Subsidies are the basis of the market-based approach to supporting the recycling industry, and make up the bulk of the Program’s expenses. In 2017, CARE’s California Program invested $16.5 million in subsidies, grants and other incentives to accelerate recycling, diversion and recycled product development efforts in California.

- To further spur market development, in 2016 CARE’s California Program awarded $2 million in grants to support capital investments and product testing, increasing California’s recycling capacity by an estimated 30%, creating over 1 dozen new California jobs and greater stability to the industry. These grant projects continued to contribute to Program goals in 2017, while a new Micro-grant element was launched to support collection and reuse.

- Three new pilot subsidies were adopted including carpet tile collection (effective January 1, 2018), Tier 2 nylon 6 recycled products (effective October 1, 2017) and commercial broadloom (effective July 1, 2018, under the new Plan), while CAAF and Kiln subsidies were discontinued to support higher and better use strategies.

- Additional market development efforts included increased promotion of recycled carpet products, product testing support to explore and expand the uses for post-consumer carpet recycled content and technical assistance to develop new products, markets and consumer demand.
Throughout 2017, CARE continued collaboration efforts with the California Council on Carpet Recycling, CalRecycle and other stakeholders to enhance development of the new 5-year Plan, incorporate new requirements of AB 1158 signed into law in October 2017 and add additional improvements to support Program goals into the future. The new Plan, submitted in March 2018, will be considered by CalRecycle in May 2018. The new law, AB 1158, required a recycling rate of 24% by January 1, 2020. In addition, the prior Advisory Council was terminated at the end of 2017 as the new law also required the appointment of an Advisory Committee by CalRecycle.

The California state-wide recycling rate dropped from 50% in 2014 to 47% in 2015 and again to 44% in 2016. It is widely anticipated the rate will drop again in 2017. This is a good indication of just how challenging the recycling markets are now.

The recycling industry continues to see challenges in the marketplace, from world commodity prices to shifting business trends and the impact of the China National Sword program. CARE continues to work to meet the requirements of California’s Carpet Stewardship Laws and to support the retailers, processors and manufacturers that make carpet recycling possible.

While the numbers are not yet official for CA, the recycling rate of 14% was an increase of 27% in 2017 and is up 100% since the low point in Q3 of 2015.

In California in 2017:

- 98 million pounds of post-consumer carpet was collected before it could go to landfill (down 9% from the 107 million collected in 2016.)
- 47 million pounds of recycled output was produced (up 27% over the 38 million pounds recycled in 2016.)
- 14% of total estimated California post-consumer carpet discards were recycled in 2017, reaching a quarterly high of 16% in Q1, before falling to 13% in Q2-Q3 and up to 14% in Q4.
ADDITIONAL INDICATORS

CARE has been working since 2011 to solve some of the industry’s challenges. Despite a market decline falling to 7% in Q3 2015, the Program is beginning to rebound.

- To increase carpet collection, the law requires that collection be convenient for California’s citizens. CARE has initiated a study to define what convenient collection means for carpet vs. bottle, vs. paint. Carpet is a bit different from many other commodities in that the vast majority of carpet is installed by professional installers and it not handled by the consumer/homeowner. CARE does provide support and technical assistance to drop-off sites across the state; California is the only state with this kind of program. The number of CARE-supported California drop-off sites increased to 44 in 2017 from 33 sites in 2016, a 30% increase. New sites continue to be added throughout 2018. Additional collection sites are supported directly by private collector sorter entrepreneurs, estimated at over 200 sites. In addition, the Program increased cost efficiency, reducing public collection costs by 33% from $0.15/pound in 2016 to $0.10/pound in 2017.

- Despite some losses during the period, the number of recycled carpet products and vendors, driven by the California program, is remaining steady with more than 25 products now available from 10 vendors. See the CARE Product Catalog and Buy Recycled pages for details. CARE Product Catalog: https://carpetrecovery.org/wp-content/uploads/2014/04/2017-CARE_CatalogueFINAL6-MB-1.pdf
▪ CARE expanded promotion of the DoubleGreen™ product designation to encourage the inclusion of post-consumer carpet in recycled products. DoubleGreen™-labeled products contain recycled California post-consumer carpet material plus at least one other post-consumer recycled material.

▪ Type 1 recycled output was up 6% in 2017 over 2016, while CARE’s PC4 subsidy, added in 2015, significantly increased recovery and use of PC4 carpet backing in the manufacture of recycled products totaling over 10.5 million pounds in 2017, up 337% from 2.5 million pounds in 2016.

▪ Although a smaller portion of the carpet waste stream, carpet tiles are up to 100% recyclable representing an important opportunity to increase recycling rates. Carpet tile recycling was down 23% in 2017 compared to 2016. Reuse of both carpet tile and broadloom was also down 55% in 2017 compared to 2016.

▪ Expanded use of PC4 carpet backing helped to increase recycled output yield to 48% (the amount of post-consumer carpet gross collected which is converted into recycled output feedstock), up from 35% in 2016.

Since the start of the California program in 2011:

▪ 699 million pounds of post-consumer carpet was gross collected by collector sorters entrepreneurs.

▪ 431 million pounds of post-consumer carpet were diverted from California landfills as reuse, recycled output, energy recovery, export or other methods.¹

▪ 255 million pounds of post-consumer carpet has been reused or recycled.

▪ 60 million pounds of recycled output have been manufactured into new Tier 2 non-nylon products such as carpet cushion, underlayment, pellets, insulation, signage, erosion control and other products.

▪ $52 million in assessment funds have been invested in recycling efforts to date.

¹ After collection, carpet is processed for recycling. On average about 36% of gross collected material is reused or recycled (yield), while 20% of the by-product of recycling is then sent to landfill, hence the net diversion figure. In 2017, 48% of gross collections were recycled.
Figure 2: Annual Performance Trends for Gross Collections & Recycled Output

![Graph showing annual performance trends for gross collections and recycled output over years 2012 to 2017. The graph includes two lines: one for gross collected and another for recycled output. The data points show fluctuations with peaks and troughs for each year.](image-url)
VPS Program

The VPS Program began in January of 2015 and was designed to operate for two years. The VPS Program is market-based, and Collector/Sorter Entrepreneurs (CSEs) participants agree to accept and manage all applicable post-consumer carpet, regardless of polymer type or primary materials or construction. VPS 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 in the United States and internationally. The program completed its second year of operation in 2016 with a budget of $4.5 million. The program was renewed for 2017 due to deteriorating market conditions with a budget of $4 million.

After an extremely challenging year in 2016, the market conditions in 2017 did not improve. A new set of challenges manifested themselves with the continued decrease in demand of Nylon 6 material and the decreased price of recycled polyurethane foam pad. Polyurethane pad is a revenue source for many recyclers. In the times of low demand for Nylon 6, pad collection and recycling can often offset losses incurred by the collection and sortation of carpet. As the pad prices drop, these revenues streams decrease as well. Nylon 6.6 material is in high demand throughout the U.S., but CARE anticipates that this is less than 10% of the waste stream. Accessing this material is also a factor, since much of the material that’s brought in as a result must be disposed of instead of recycled. The decrease in demand has resulted in rising inventory levels.

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 $0.02 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 $0.01 per pound of output.
Table 1: VPS Output Destinations

<table>
<thead>
<tr>
<th>Pounds of Output</th>
<th>Q1 2017</th>
<th>Q2 2017</th>
<th>Q3 2017</th>
<th>Q4 2017</th>
<th>Total 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broadloom Re-Used ($0.02)</td>
<td>24,544</td>
<td>43,576</td>
<td>15,390</td>
<td>179,295</td>
<td>262,805</td>
</tr>
<tr>
<td>Carpet Tile Re-used ($0.02)</td>
<td>299,499</td>
<td>267,817</td>
<td>108,559</td>
<td>403,873</td>
<td>1,079,748</td>
</tr>
<tr>
<td>Shipped Internationally ($0.02)</td>
<td>207,868</td>
<td>4,629,687</td>
<td>1,062,080</td>
<td>32,527</td>
<td>5,932,162</td>
</tr>
<tr>
<td>Shipped inside U.S. ($0.02)</td>
<td>30,194,143</td>
<td>28,361,356</td>
<td>25,891,468</td>
<td>23,589,810</td>
<td>108,036,777</td>
</tr>
<tr>
<td>Waste-to-Energy ($0.01)</td>
<td>8,462,076</td>
<td>6,367,046</td>
<td>4,295,163</td>
<td>3,824,790</td>
<td>22,949,075</td>
</tr>
<tr>
<td>Pyrolysis ($0.01)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cement Kiln ($0.01)</td>
<td>1,211,596</td>
<td>1,809,881</td>
<td>2,821,603</td>
<td>1,562,958</td>
<td>7,406,038</td>
</tr>
<tr>
<td>CAAF ($0.01)</td>
<td>1,824,329</td>
<td>1,662,747</td>
<td>1,118,475</td>
<td>1,357,384</td>
<td>5,962,935</td>
</tr>
<tr>
<td>Total</td>
<td>42,224,055</td>
<td>43,142,110</td>
<td>35,312,738</td>
<td>30,950,637</td>
<td>151,629,540</td>
</tr>
</tbody>
</table>

Table 2 breaks down the output by fiber type. CARE feels that this represents the demand for various fiber types in the marketplace. Table 1 presents a steady decline of output throughout 2017. Q4 2017 had the lowest output total since the program began in January 2015. Material that was shipped inside of the U.S. for processing and Waste-to-Energy are the biggest contributors to the drop. As mentioned earlier, demand for Nylon continued to drop throughout the year. A large waste-to-energy facility in the Southeastern United States stopped accepting carpet for a long period of time, which greatly impacted many recyclers throughout the region. Carpet tile can be reused and recycled, but rising transportation costs have deterred any significant growth for that category.

Table 2: Face Fiber Breakdown – Shipped and Sold

<table>
<thead>
<tr>
<th>Face Fiber Breakdown - Shipped and Sold</th>
<th>Q1 2017</th>
<th>Q2 2017</th>
<th>Q3 2017</th>
<th>Q4 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nylon 6</td>
<td>45%</td>
<td>43%</td>
<td>37%</td>
<td>36%</td>
</tr>
<tr>
<td>Nylon 6,6</td>
<td>25%</td>
<td>26%</td>
<td>26%</td>
<td>23%</td>
</tr>
<tr>
<td>Modular Carpet Tile</td>
<td>3%</td>
<td>4%</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>Polypropylene</td>
<td>5%</td>
<td>6%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>PET</td>
<td>21%</td>
<td>21%</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td>Other/Mixed Fibers</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
</tr>
</tbody>
</table>
Figure 3 tracks the total PCC sorted output over time. The data starts with Q1 2015 and ends with Q4 2017, so this graph includes all the recycled output numbers since the VPS Program’s inception. Remember that the data here tracks both Type 1 and Type 2 output, meaning that high value recycling and WTE applications are included in the total number. With exception of two quarters, the amount of output has continued to decline throughout the life of the program. The market for post-consumer carpet materials has contracted each year. The total output for material in Q4 2017 is less than half of the output for Q1 2015. It’s estimated that the output numbers could have been significantly lower had it not been for VPS funds. Note that the VPS data excludes collection in California.

**Figure 3: CSE Output, 2015-2017**
Figure 4 presents the total amount of pounds sorted and shipped by CARE CSEs on an annual basis. The amount of material continues to drop drastically every year. CARE anticipates that this trend will continue into 2018.

**Figure 4: CSE Total Annual Output, 2015-2017**
Figure 5 represents the inventory levels. This chart tracks inventory levels through the life of the VPS Program. The inventory levels rose dramatically in 2017. Many CSEs are choosing to store the Nylon 6 material in hopes of a market in the future. Inventories have also increased due to lack of other outlets (waste-to-energy, cement kiln). The inventory levels have caused many CSEs to cease collection activity. These inventory levels will remain high until viable market outlets for Nylon 6 and polyester materials are available.

**Figure 5: CSE Inventory Levels, 2015-2017**
CARE 2017 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.

2017 CARPET RECYCLING INDUSTRY LANDSCAPE

CARE weathered another challenging year in 2017. Various macroeconomic issues continued to thwart our efforts in increasing the amount of material that’s diverted from landfills. CARE is the designated stewardship organization for the AB 2398 recycling law in the State of California and the Voluntary Product Stewardship Program funded by the Carpet and Rug Institute. CARE also operates on a day-to-day basis as it continues its search for market-based solutions. Considering all three budget buckets, CARE was responsible for approximately $30 million in 2017.

The data represented includes material from all the programs that CARE manages. California (high-level summary) and VPS numbers that were presented independently in the earlier sections of this report. Details for the California Program are reported in a separate report to CalRecycle due to issue on September 1, 2018.

As mentioned earlier, decreased demand due to lack of end markets has negatively impacted everyone in the supply chain. Lower oil and natural gas prices have made virgin products more cost-effective than recycled materials. China’s National Sword has also had a tremendous impact on many recycling markets, not just carpet. Combine that with a global oversupply of caprolactam (basic building block of nylon 6) and rising logistics costs throughout the country, and it’s easy to see why many in the industry are struggling.

CARE has experienced these challenges in the past, but the organization and its membership has always risen to the challenge. While these challenges are some of the worst that the organization has seen, CARE’s 16-year history proves that we will survive and overcome.
ANNUAL SURVEY METHODOLOGY

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)
- Employment data

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 overall operations, program structures and resource allocation. CARE continues to refine its reporting and data analysis. For the 2017 survey, CARE used the same method instituted in 2016. 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 the CSEs in the United States participate in the Voluntary Product Stewardship and report their numbers monthly, so CARE already had most of the information required. The survey was sent to 51 CSEs; 20 completed the survey for a response rate of 39%.

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 9 processors and manufacturers across the US. All recipients of the survey responded.

A copy of both 2017 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 2017. 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 2017

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. CARE methodology uses a mass balance approach. Since operators know with great accuracy the pounds of material shipped out of a facility (the shipper is either being paid by the pound by a customer or is paying by the pound for landfilling or energy conversion), CARE simply collects all output data and back calculates what must have come in to support the reported outputs.

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 United States 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 United States.

- **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 77% currently.
P = Average weight of carpet per square yard.

A carpet weight analysis was conducted in 2016. (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.) The average weight used is now 4.4 pounds per square yard.

D = Pounds of carpet from demolition projects not replaced.

In 2017, the weighted demolition rate (87% residential and 13% commercial) was estimated at 0.55%, (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 2016. Based on an analysis of historical data back to 1975, in 5-year increments, it is estimated that deselection represents <0.75% per year. In certain areas of the U.S., this rate may be increasing driven in part by both the increasing assessment in California (10% of the U.S. population) and the rapid growth of LVT displacing carpet. Based on 2017 total estimated discards of 3.37 billion pounds, deselection equates to an estimated 26 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 2017 and rounded for clarity.

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

Sales 2017: 982 Million square yards

Discards = (982 * 0.78) * 4.4) = 3,328 million pounds + D + DS

Where D = 3,328 * 0.0055 = 18 million pounds

Where DS = 3,328 * 0.0075 = 25 million pounds

Thus, Discards = 3,328 + 18 + 25 = 3,371 million pounds

**POST-CONSUMER CARPET COLLECTION AND RECYCLING: QUANTITATIVE RESULTS FOR 2017**

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 works with the data as received and to seek clarification when necessary. 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. However, it should be noted that all VPS and CA program participants are subject to an independent Agreed Upon Procedure protocol that works to verify and validate data submitted. Results presented here are inclusive of all lower 48 states. Key results include:

- 394 million pounds of gross collected post-consumer carpet in 2017 = Diversion Rate of 14%
- 180 million pounds of post-consumer carpet was recycled in 2017, a recycling rate of 5%
- Recycled output yield was 45% (Output/gross collection)
- > 5 billion pounds of cumulative diversion since 2002
- 107 million pounds were sent back to landfill in 2017
- Inventory increased by 6 million pounds
- 97% of all reported recycled lbs. were processed in the United States
- Engineered resins made up 81% of end market outlets
- Face fiber, closed-loop, is now 4%

Table 3 shows a comparison by pounds and percentage of the quantity of post-consumer carpet recycled and diverted from landfill from 2007 through 2017. 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. CARE continues to refine this method each year. CARE has now diverted over 5 billion lbs. of carpet from landfills in the United States since 2002. The amount of recycled output did increase by 11 million lbs. in 2017 while the amount sent back to landfill dropped significantly. CARE believes that this is due to CSEs being more selective about the material that they’re bringing into their facilities. For example, if a CSE is currently collecting from an area that produces a large amount of PET and Nylon 6 material, then the CSE may chose not to offer the collection service in that area. With rising inventory levels and decreasing demand for certain fiber types, this is happening frequently in the marketplace.

### Table 3: Post-Consumer Carpet Recycling and Diversion Statistics, 2007-2017

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Discards*</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>
<td>3,756</td>
<td>3,371</td>
</tr>
<tr>
<td>Diversion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reuse</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>
<td>13</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Recycled Output**</td>
<td>250</td>
<td>294</td>
<td>185</td>
<td>114</td>
<td>170</td>
<td>167</td>
<td>178</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Int’l Recycle Yield (45%)</td>
<td>10</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Recycled</td>
<td>275</td>
<td>243</td>
<td>246</td>
<td>271</td>
<td>250</td>
<td>284</td>
<td>185</td>
<td>124</td>
<td>177</td>
<td>171</td>
<td>183</td>
</tr>
<tr>
<td>Total Reuse + Recycle</td>
<td>275</td>
<td>247</td>
<td>258</td>
<td>273</td>
<td>251</td>
<td>299</td>
<td>197</td>
<td>126</td>
<td>190</td>
<td>174</td>
<td>185</td>
</tr>
<tr>
<td>Waste-to-Energy</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>
<td>55</td>
<td>46</td>
</tr>
<tr>
<td>CAAF or Cement Kiln</td>
<td>2</td>
<td>2</td>
<td>12</td>
<td>26</td>
<td>36</td>
<td>11</td>
<td>23</td>
<td>113</td>
<td>120</td>
<td>89</td>
<td>44</td>
</tr>
<tr>
<td>Int’l Ship (Gross-Yield)</td>
<td></td>
<td></td>
<td></td>
<td>31</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Internal Use</td>
<td>74</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sent back to Landfill</td>
<td>224</td>
<td>191</td>
<td>174</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL Diverted</td>
<td>296</td>
<td>290</td>
<td>317</td>
<td>337</td>
<td>333</td>
<td>352</td>
<td>463</td>
<td>404</td>
<td>555</td>
<td>489</td>
<td>458</td>
</tr>
<tr>
<td>Net Diversion***</td>
<td>180</td>
<td>364</td>
<td>315</td>
<td>351</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recycling Rate</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>6%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Gross Diversion Rate</td>
<td>6%</td>
<td>7%</td>
<td>9%</td>
<td>10%</td>
<td>9%</td>
<td>10%</td>
<td>13%</td>
<td>12%</td>
<td>16%</td>
<td>13%</td>
<td>14%</td>
</tr>
</tbody>
</table>

* Total Discards calculation includes deselection (DS)
** Includes a 45% yield on international lbs.
*** Net diversion is gross diversion subtracted by pounds sent to landfill
The mass balance of outputs method, Figure 5 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 closed the gap between directly reported gross collections and using the mass balance approach to within approximately 10%.

CARE manages two programs that accumulate data from all three parts of the supply chain. The VPS program collects data from the National collection network (which excludes CA), and AB 2398 collects data from collectors, processors and manufacturers in CA, so CARE has a high degree of confidence in the accuracy of this data. Due to selectivity of material due to eroding market conditions alluded to earlier, gross collections were down significantly this year at 394M pounds, compared to 488M pounds in 2016. CAAF/Kiln dropped significantly as well. Rising transportation costs and accessibility to these facilities have caused this decline.

**Figure 6: Mass Balance Approach to Estimating Gross Collection in 2017**

Gross Collections 394 M lbs.  
Reporting Boundary Increase in Inventory 6M lbs.  
Recycled + Reuse 180 M lbs. (45% yield)  
Landfill 107M lbs.  
WtE 46 M lbs.  
CAAF/Kiln 44 M lbs.  
International 11 M lbs.  
5 M lbs. recycled 6 M lbs. to LF

Output = Gross Collections + International + Inventory Change = 180+107+46+44+11+6 = 394 M lbs. input required
Figure 7 represents the historical trend of gross pounds of post-consumer carpet collected each year since 2002. Using the mass balance approach, gross collection for 2017 is calculated to be 394 million pounds. This is a decrease of 94 million lbs. (-19%) from 2016, and it is mainly due to the adverse macroeconomic issues that persist in the marketplace and an increase in the selectivity of fiber types entering sorting facilities. This did not come as a surprise given economic conditions, particularly in the VPS Program. As represented graphically earlier in the report, the amount of output for CSEs continued to decline each quarter, and the output totals are now half what they were two years ago. California collection remained steady while output has continued to climb.

Please note that CARE began using the mass balance methodology in 2013. This explains the large jump from 2012 to 2013. CARE continues to make improvements to its reporting annually. Cumulative diversion from landfill since CARE’s inception totals over 5 billion pounds. Considering that CARE started in 2002 with essentially a blank sheet of paper and limited resources, 5 billion lbs. is certainly an achievement despite recent headwinds, especially considering the recession of 2008 and the major fluctuation in oil prices, the continuing policy changes in China, and the increase in transportation costs.

Figure 7: Historical Post-Consumer Carpet Diversion, 2002-2017
Figure 8 represents the next step in the supply 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 2017, 30% was sent back to the landfill. This number is 6% lower than 2016. While this is what was calculated through the mass balance, it should be noted that it is impossible for CARE to calculate the amount that would have been landfilled had CSEs not been selective of material coming into their facilities.

The amount of material sent to recycling processes increased from 33% in 2016 to 47% in 2017. CARE believes that the changes are due to the material selectivity mentioned earlier, ultimately resulting from the market challenges. CAAF and Kiln and Waste-To-Energy output dropped by 8% and 1% respectively. This is due to rising transportation costs and accessibility to CAAF, Kiln, and WTE facilities.

For historical data, the reader is encouraged to visit https://carpetrecovery.org/newsblog/reading-room/.

**Figure 8: Outlets for Post-Consumer Carpet Collected, 2017**
End Products Manufactured from Post-Consumer Carpet

Respondents reported that 81% of recycled post-consumer carpet is manufactured into engineered resins. This is up 9% from last year. This is the highest level ever reported to CARE. A large fiber manufacturer ceased recycling operations a few years ago, so much of the excess supply went to engineered resins applications.

Figure 9: End-Product Markets for Post-Consumer Carpet, 2017

International Markets for Post-Consumer Carpet Material

In 2017, the United States consumed 97% of the post-consumer carpet material collected. This was down 3% from 2016. In 2017, 11 million pounds were shipped internationally. Of the material shipped, it is estimated that 5 million pounds was recycled and that 6 million pounds went back to the landfill. This estimation is based on the recycled output rate of 45% for the United States. The National Sword initiative in China has hindered any international growth in the past few years.
Nylon 6 Sorted Output Decreased; Nylon 6,6 Remained Constant from 2016-2017

Collectors are now being more selective about material that’s being brought into their facilities. This means that the percentages in Figure 10 do not accurately represent the composition of the waste stream, only what was brought into sorting facilities. This is a survival tactic adopted by many to cut down on waste disposal costs and to provide adequate space for the more valuable carpet fibers and foam pad.

In 2017, Nylon 6 and Nylon 6,6 fibers accounted for 67% of the total sorted carpet fiber. The amount of nylon 6 decreased by 6% in 2017. Nylon 6,6 grew by 1%. Demand for Nylon 6 fiber has dropped dramatically in the past couple of years, making the material less valuable. Many sorters have a large supply of Nylon 6 in their inventory. As depicted in the VPS section of the report, inventory levels have grown substantially. Many simply don’t have the capacity to stockpile more Nylon 6 in their facilities.

Nylon 6,6 remains in high demand, but there simply isn’t enough in the waste stream. Based on industry shipments of new carpet, nylon 6,6 represents nominally 10% of all carpet sold today. The majority of this is in the commercial sector, making processing more difficult. CARE anticipates that the demand for Nylon 6,6 will remain high into 2018, but the amount of material anticipated in the waste stream is also predicted to decrease as it has in the past few years.

PET percentage was 24%, up three percentage points from 2016. There is still no economically viable option for polyester fiber, but CARE will continue its work on developing potential end markets. There is, however, a significant subsidy for non-nylon material in the AB 2398 California program. This has caused the amount of PET collected in CA to increase. Most of the PET fiber that is brought to facilities outside of the State of California is sent back to the landfill or an energy recovery facility.
Figure 10: Post-Consumer Carpet Fiber Type, 2017

Note: N66=Nylon 6,6; N6=Nylon 6; PP=Polypropylene; PET=Polyethylene terephthalate

* Percentage decrease versus 2016
For historical perspectives, Figure 11 shows the shift in carpet face fiber from 2008-2017. Remember that the percentages are based on what is reported by collectors. Due to fiber selectivity, this is not an accurate depiction of what’s in the waste stream. The biggest change from 2016 to 2017 is the drop in Nylon 6. A drop in demand for Nylon 6 has made this material less desirable to many CSEs. Nylon 6,6 collection has remained constant, but there’s been an increased demand in the past couple of years. Polypropylene is in a similar situation in that the demand for PP material is there, but there’s little available in the waste stream. Less than 10% of all carpet sold today is PP face fiber. As consumer preferences and product offerings continue to shift towards polyester material, there will be even less Nylon 6,6 or Polypropylene material in the waste stream. Overall CARE estimates that Nylon 6 and PET each make up approximately 40% of new carpet sales, leaving about 10% each for Nylon 6,6 and PP. When you look at the split between residential and commercial, PET make sup at least 60% of residential sales.

**Figure 11: Post-Consumer Carpet Fiber Output Trends, 2008-2017**
CARE CARPET RECYCLING SURVEY RESPONDENTS EMPLOYED AN ESTIMATED 997 PEOPLE IN LOCAL COMMUNITIES ACROSS THE U.S. IN 2017

The respondents to the CARE Annual Survey employed 997 people in local communities in 2017, a decrease of 218 people or 22% versus 2016. Some companies ceased operations in 2017; others reduced their workforces significantly due to market difficulties. With potentially new market outlets forecasted to come online in 2018, it’s difficult for CARE to anticipate growth or decline for 2018.

**Figure 12: Total Employment by CARE Survey Respondents**

![Bar graph showing total employment by year (2010-2017) with the following data points:
- 2010: 1,133
- 2011: 1,462
- 2012: 1,318
- 2013: 1,120
- 2014: 1,163
- 2015: 1,295
- 2016: 1,215
- 2017: 997]
COLLECTION OF CARPET BY REGION

Figure 13 shows where respondents collected carpet, by region.

Figure 13: Reporting Regions in the United States
Figure 14 shows that post-consumer carpet collection is highest in the California (41%), followed by the Southeast (36%), the Southwest (14%), Northeast (4%), the Midwest (3%), then the Northwest (2%). However, on a single state basis, CA is clearly the largest volume state. This is only possible due to the large subsidy program in the State of California.

**Figure 14: Collection of Carpet by Region, 2017**

Figure 14 depicts the geographic distribution of carpet collection for 2017, but that doesn’t present a comparison to 2016. Table 4 compares 2016 to 2017 and tracks the fluctuations by both percentage points and lbs. Except for California, other regions across the United States decreased in number of lbs. California, because of its subsidy program, increased the amount of material collected by 11% or by 11 million lbs. It was the only region in the country that increased collections. The rest have fallen significantly. The Southeast, where much of the material processing outside of California takes place, decreased by over 20 million lbs. If market conditions don’t improve, it’s anticipated that these geographical trends will continue.
Table 4: Region Distribution Change, 2016 vs. 2017

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>11%</td>
<td>111,093,322</td>
<td>122,922,202</td>
</tr>
<tr>
<td>NW</td>
<td>-19%</td>
<td>8,953,545</td>
<td>7,250,921</td>
</tr>
<tr>
<td>MW</td>
<td>-72%</td>
<td>30,710,679</td>
<td>8,527,702</td>
</tr>
<tr>
<td>NE</td>
<td>-48%</td>
<td>23,317,435</td>
<td>12,164,023</td>
</tr>
<tr>
<td>SE</td>
<td>-17%</td>
<td>131,741,939</td>
<td>109,148,010</td>
</tr>
<tr>
<td>SW</td>
<td>-40%</td>
<td>71,186,359</td>
<td>42,687,449</td>
</tr>
</tbody>
</table>
Qualitative Feedback from CARE 2017 Survey Respondents

In the 2017 survey, 92% of respondents (n=24) said CARE was meeting their needs. This has increased from 2016’s result of 90%. CARE continues to look for ways to increase value and support for its members.

Figure 15: Survey Respondents’ View of Whether CARE is Meeting Their Needs

SUMMARY

- CARE used the mass balance approach for the fifth consecutive year. Refinements are continuing to be made to both the Annual Survey and the reporting forms of the programs that CARE manages.
- Challenges persist in the marketplace. Many collectors and sorters are struggling in current economic conditions. Collectors are adjusting their business models to remain in operation. There is currently only one fiber type that’s being collected that is currently in demand. Nylon 6,6 is currently the only material of value that CSEs outside of California can bring into their facilities. Unfortunately, Nylon 6,6
makes up very little of the waste stream, and the amount of available material decreases on an annual basis.

- Engineered resins continued to increase and represents an all-time high of 81% of recycled output for 2017.
- “Closed loop recycling” decreased from 11% in 2016 to 7% in 2017. Most of this is a result of tile backing recycle.
- International activity continued to decrease due to drop in demand in Asia.
- Overall collections were down significantly, 19%. The only region in the United States where collections increased was in California, where there’s a specific stewardship program for carpet recycling. In the Southeast, where two large processors operate, the amount of collection dropped by more than 20 million pounds compared to 2016.
- 92% percent of all respondents from the Annual Survey feel that CARE is meeting their needs.

**SURVEY METHODOLOGY**

In developing a survey methodology to establish quantitative estimates of recycling of a particular waste stream, two key factors must be considered: 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 these different types of entities (collectors, sorting facilities, processors and manufacturers) are included in the survey, the chance exists that a 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.
Several 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, a web-based surveying tool was again 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 application of multiple means of contact, as well as repeated contact. 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 2016 was updated based on respondents’ feedback from last year. The 2017 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 members to preserve confidentiality.
3. Based upon past experiences 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 60 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. NOTE: there were 24 responses for a 40% response rate.

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 anonymously), follow-up was attempted to clarify the responses. In most cases these efforts were successful. In a few cases site visits were conducted for clarity.

7. Data were transferred to a spreadsheet-based database. This database contains all 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 of Georgia Tech 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 2017 CARE Annual Report.
CARE Outreach Results, 2017

15TH ANNUAL CARE CONFERENCE

In 2017, members and colleagues of CARE gathered at its 15th Annual Conference, in downtown Indianapolis, Indiana, in early May. The conference format included a one-and-a-half-day event. The venue provided great opportunities 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:

2016 Recycler of the Year – Interface

A CARE partner, the company’s Founder Ray Anderson adopted a bold vision that involved recycling and sustainability in 1994. Since then, Interface has been one of the industry leaders in recycling carpet.

Interface became the first manufacturer to implement a process for the clean separation of carpet fiber from backing on modular carpet tiles. The program, ReEntry, began in 2007 and has processed millions of pounds of material.
CARE Executive Director Bob Peoples (left), Robbie Fuller of Interface, and CARE Chairman Brendan McSheehy
2016 CARE Person of the Year – Dick Kruse

Dick Kruse, is a former member of CARE’s Board of Directors and founded Kruse Carpet Recycling in Indianapolis, IN. Kruse boasts many years of experience in the carpet recycling industry. He’s also been instrumental in developing CARE into the organization that it is today.

“CARE and the whole recycling community has benefited enormously from the insights Dick brought to our discussions and decisions,” says Dr. Robert Peoples, Executive Director of CARE.

Dick Kruse (center) accepts the CARE Person of the Year Award from Rocky Ponders (right, 2015 winner) and Executive Director Bob Peoples (left)
CARE WEBSITE TRAFFIC

The following charts provide a general overview of website activities for 2017.

Figure 16: CARE Website Visits, 2017
Figure 17: CARE Map Webpage Visits, 2017

<table>
<thead>
<tr>
<th>Month</th>
<th>Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>1,290</td>
</tr>
<tr>
<td>February</td>
<td>1,416</td>
</tr>
<tr>
<td>March</td>
<td>1,432</td>
</tr>
<tr>
<td>April</td>
<td>1,389</td>
</tr>
<tr>
<td>May</td>
<td>1,385</td>
</tr>
<tr>
<td>June</td>
<td>1,453</td>
</tr>
<tr>
<td>July</td>
<td>1,435</td>
</tr>
<tr>
<td>August</td>
<td>1,257</td>
</tr>
<tr>
<td>September</td>
<td>1,287</td>
</tr>
<tr>
<td>October</td>
<td>1,349</td>
</tr>
<tr>
<td>November</td>
<td>1,279</td>
</tr>
<tr>
<td>December</td>
<td>1,053</td>
</tr>
</tbody>
</table>
Figure 18: CARE AB 2398 Webpage Visits, 2017
Figure 19: New vs. Returning Webpage Visitors, 2017

- New Visitor: 86.5%
- Returning: 13.5%
Appendix 1: CARE Annual Survey

**Copy of 2017 CARE Annual Survey**

Dear CARE Carpet Reclamation and Recycling Partner,

Thank you for taking the time to complete the 2017 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 **Wednesday, January 31, 2018**.

**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)

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


* 2. 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.

**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/leasing 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:
3. Please use the Processor Flow Chart to answer this question.
   *Do not use commas
   
   **Example:**

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

<table>
<thead>
<tr>
<th>a. Pounds received from sorter</th>
<th>b. Pounds of Starting Inventory</th>
<th>c. Pounds to Landfill</th>
<th>d. Pounds to International</th>
<th>e. Pounds of Ending Inventory</th>
<th>f. Pounds Reused</th>
<th>g. Pounds to CAAF</th>
<th>h. Pounds of Processed Fiber</th>
<th>i. Pounds of Filter</th>
<th>j. Pounds to Cement Kiln</th>
<th>k. Pounds to WTE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. How are you handling the PET carpet you recieve (outlets or landfill)?

   [Blank space for answer]

5. How are you handling the Nylon 6 carpet you recieve (outlets or landfill)?

   [Blank space for answer]
6. Please use the Manufacturer Flow Chart for this question.
   * Do not use commas

Example:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Lbs. received from processor</td>
<td></td>
</tr>
<tr>
<td>b. Lbs. of starting inventory material</td>
<td></td>
</tr>
<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 WTE</td>
<td></td>
</tr>
</tbody>
</table>
Manufactured Products Output

- a. _____ Lbs. your products
- b. _____ Lbs. Engineered Resin
- c. _____ Lbs. Molded/Extruded
- d. _____ Lbs. Carpet Fiber
- e. _____ Lbs. Carpet Backing
- f. _____ Lbs. Carpet Cushion
- g. _____ Lbs. of _____
- h. _____ Lbs. Filler
7. 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.

*Do not use commas

a. Pounds of Material Used
   Overall

b. Pounds to Engineered
   Floor

c. Pounds
   Molded/Extruded

d. Pounds for Carpet fibers

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 ______%
8. To the extent known, identify what percent of the material received came from each geographic area.

Note - Totals must equal 100%

- California
- Northwest
- Midwest
- Northeast
- Southeast
- Southwest

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

☐ Yes  ☐ No

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

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

Print Name:
* 12. Company and Contact Information

Name:  
Company:  
Address:  
Address 2:  
City/Town:  
State:  -- select state --  
ZIP:  
Country:  
Email Address:  
Phone Number:  

Dear CARE Carpet Reclamation and Recycling Partner,

Thank you for taking the time to complete the 2017 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 Wednesday, January 31, 2018.

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)

* 1. For every square yard of Nylon carpet you collect in the waste stream, how many square yards of PET carpet do you see?
* 2. For every square yard of Nylon 6.6 carpet you collect in the waste stream, how much Nylon 6 carpet do you see?


* 3. Please indicate (in percentages) all regions that your sorted output (material for processing or WTE) was shipped to.

Note - Totals must equal 100%

California
Northwest
Midwest
Northeast
Southeast
Southwest
International

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

  ○ Yes
  ○ No

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


6. What was your ending inventory as of December 31, 2017?


* 7. I affirm that the answers provided in this survey are accurate and complete to the best of my knowledge.
<table>
<thead>
<tr>
<th>* B. Contact Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Company</td>
</tr>
<tr>
<td>Address</td>
</tr>
<tr>
<td>Address 2</td>
</tr>
<tr>
<td>City/Town</td>
</tr>
<tr>
<td>State/Province</td>
</tr>
<tr>
<td>ZIP/Postal Code</td>
</tr>
<tr>
<td>Country</td>
</tr>
<tr>
<td>Email Address</td>
</tr>
<tr>
<td>Phone Number</td>
</tr>
</tbody>
</table>
Appendix 2: Definitions

DEFINITIONS USED IN THE CARE 2017 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).

Appendix 3: CARE Board of Directors, 2017

CARE BOARD OF DIRECTORS, 2017

Brendan McSheehy, Jr. – Board Chair, Universal Fiber Systems LLC
Russell Bennett – Tandus Centiva
Russ Delozier – Secretary, Engineered Floors
Paul Devereux – Natural Transitions
Don Dolan – Masland Contract
Joe Foye – Mohawk Industries
Ron Greitzer – LA Fiber
Philip Ivey – Milliken
Dick Kruse – Kruse Carpet Recycling
Anna Lange – South Carolina Department of Commerce
Jim Lindsey – Aquafil, Inc.
Paul Murray – Treasurer, Shaw Industries Group, Inc.
Eric Nelson – Interface
Bob Peoples – Executive Director, CARE
Sean Ragiel – CarpetCycle
Louis Renbaum – Wellman
Fred Williamson – StarNet Worldwide Commercial Flooring Partnership
Joe Yarbrough – Vice Chair, The Carpet and Rug Institute
Marjaneh Zarrehparvar – PaintCare

CARE BOARD ADVISORS

Frank Endrenyi, Sustainable Solutions
Dennis Hayford, Consultant
Glenn Odom, Consultant
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