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Developing market-based solutions for the recycling and reuse of post-consumer carpet

CARE

Annual Report

2003



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A MESSAGE FROM FRANK HURD, BOARD CHAIRMAN



As we look back on CARE's second year, it is one filled with some disappointments, yet many accomplishments and expectations, all of which are directed to help the CARE partners move forward toward accomplishment of the goals in the Memorandum of Understanding for Carpet Stewardship (MOU).

We had a set-back last year when Polyamid 2000 shut down operations in August 2003, thus putting a large damper on the recycling efforts and leaving only a small nylon 6 recycling facility operated by Honeywell in Canada. We again experienced a reluctance to report diversion rates. While the increase in diversion in 2003 is significant over 2002, we still did not make the amount of progress we hoped for. Until we get over this hurdle, we don't know what our actual diversion rates are.

The positive side of the ledger is much fuller. Our first annual conference in Sandestin, Florida, was a huge success and we are looking forward to another very successful conference again this year in Pensacola, Florida. We have added additional signatories to the MOU and the California Integrated Waste Management Board reaffirmed its commitment to CARE. Last year we gave out \$92,000 in grants to facilitate the work of entrepreneurs looking for ways to divert carpet from landfills and will provide even more this year. We named a Recycler of the Year and a CARE Person of the Year. A special thanks needs to go the sponsors of CARE who make it possible to fund the grants and other activities of CARE. Additionally, we were very fortunate to receive a grant from the Environmental Protection Agency (EPA) designed to help CARE with its mission.

CARE has put in place a five-year plan with goals to develop a viable CARE organization that will have a full time staff to augment the great work of the volunteers of CARE. The plan lays out the process for finding the enabling technologies necessary to accomplish CARE's goals and how best to set up a communication network to facilitate CARE's objectives. As with any plan, we have laid out the staffing and funding requirements. I am excited to announce that CARE now has an Executive Director, Bob Peoples. Bob has recently retired from Solutia, Inc. and has been an active member of the CARE Board of Directors since day one. In fact last year the Board of Directors named Bob the first CARE Person of the Year.

Again, I need to thank the CARE Board of Directors for their tireless work and a special thanks to Linda Harrington for keeping CARE on track administratively and to Charlott Coker for all the hard work in getting out this report. Without their efforts CARE's continued success would not be possible.

I am excited for the future. I think we are laying the foundation for a growth industry, and while the diversion rate is not where we would like it to be, we are on the verge of substantial growth.

I look forward to hailing this growth in future reports.

A handwritten signature in blue ink that reads "Frank K. Hurd". The signature is written in a cursive, flowing style.

Frank K. Hurd, Chairman, Board of Directors, CARE

A MESSAGE FROM ROBERT PEOPLES, EXECUTIVE DIRECTOR



CARE has now been in existence for two full years. When I look at the list of accomplishments, we can all be proud of what this totally volunteer organization has been able to accomplish during some very trying economic times. The list is covered in more detail later in this report. Despite the fact that we did not hit our targeted diversion rate for this year, an excellent strategic plan was completed with staffing and funding requirements clearly outlined to achieve success.

What has become clear to me over the past few years is that the free enterprise approach is the right way to solve this challenging problem and that, ultimately, society must bear the cost of sustainability.

However, until we can achieve critical mass in terms of infrastructure and new product flow to generate cash, we will need to find creative ways to catalyze the initial investments to enable the initiatives advanced by CARE.

While 2003 saw CARE fall short of its targeted diversion goal, there was progress despite the shutdown of the second major nylon 6 recycling facility, Polymid 2000. The ripple effect of this event was palpable and almost took down another of our key recycle players. The good news is recycle and diversion rates were up 87 percent and 64 percent, respectively.

It has been said, "Success is perseverance for one more minute." CARE will persevere and we will accomplish our mission. Once we reach critical mass we will see a steep rise in the availability of quality feedstock going into new and innovative products. The key to success will be creating demand for products that contain post-consumer recycled content from carpet. That is where each of you can play a vital role. I believe a good portion of our challenge is to get the word out, and communicate. We need your help to make that happen. Open a dialog with CARE representatives and allow us to come by and share the story of the new industry we are creating. A new industry based on sustainable design.

Finally, I would like to personally thank the volunteers, especially our Board and the entrepreneurs, who have made it possible for CARE to move forward. Without their tireless efforts we cannot be successful. Likewise, the staff at CRI who provide all the behind the scenes support that enables our efforts.

A handwritten signature in black ink that reads "Robert Peoples". The signature is written in a cursive, flowing style.

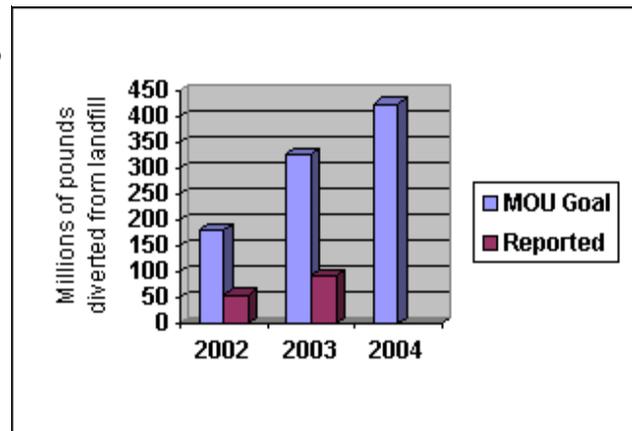
P. Robert Peoples, PhD, Executive Director of CARE

EXECUTIVE SUMMARY

In 2003 significant progress was made towards fulfilling the goals of the Memorandum of Understanding (MOU) that established the Carpet America Recovery Effort. A total of 93.7 million pounds of post-consumer carpet was reported to be diverted from landfill in 2003, with 86.6 million pounds being recycled. Compared to 2002, this represents an 87 percent increase in diversion and a 64 percent increase in recycling. As with 2002, this estimate of the level of carpet recycling is based upon data provided by a small percentage of the companies that are believed to be actually recycling carpet, meaning it is likely a significant underestimation of the level of carpet recycling. The progress in the level of diversion from 2002 to 2003, along with the goals established in the MOU, is shown in the figure below.

DIVERSION PROGRESS VERSUS MOU GOALS

Data derived from the survey of companies that recycle post-consumer carpet was used to develop a detailed sense of the flow of materials from the point of generation to their ultimate disposition. This information should prove to be useful in improving the effectiveness of market development activities, as well as in targeting future data gathering. This is particularly important in light of the fact that gathering quantitative information from companies involved in carpet recycling continues to be a challenge, despite all attempts to ensure confidentiality and to make the effort required to respond to the survey as minimal as possible.



Market development continues to be a significant challenge for the carpet recycling industry. Several companies that participated in the 2003 survey indicated their difficulties in identifying markets for post-consumer carpet and how that limited their recycling of carpet. The survey of federal and state agencies revealed that budget issues in 2003 made it difficult for many agencies to undertake activities specifically targeted at carpet recycling. Nonetheless, several agencies were active in providing grants for projects that may utilize used carpet as feedstock.

EVALUATION OF PROGRESS TOWARD NATIONAL GOALS FOR CARPET RECOVERY

The MOU that established CARE included an escalating target for diversion of post-consumer carpet from landfill, with the ultimate goal of diverting 40 percent of the post-consumer carpet generated within 10 years. In addition, the MOU included estimates of the different types of diversion that might be employed to achieve the overall goal of 40 percent. When this information is coupled with projections of the amount of used carpet that will be discarded, it results in specific quantitative targets for diversion of post-consumer carpet. These are shown in Table 1 on a weight and percentage basis, respectively.

**TABLE 1: MOU GOALS FOR POST-CONSUMER CARPET RECOVERY
(DATA EXPRESSED IN MILLIONS OF POUNDS)**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Discards ^[1]	4,678	4,828	4,537	5,038	5,261	5,590	5,642	5,887	6,020	6,605	6,772
Reuse				25			113		211		203-339
Recycling	180			353			620		903		1,354-1,693
Waste-to-Energy		48	45	50	53	56	56	59	60	66	68
Cement Kilns				100			300		200		200
Landfill	4,498			4,510			4,552		4,646		4,812
Recycling Rate	3.8%			7%			11%		15%		20 – 25%
Landfill Diversion Rate	3.8%			10%			19%		23%		27 – 34% ^[2]

Note 1. Estimates of carpet discards provided by The Carpet and Rug Institute and incorporated into the MOU.

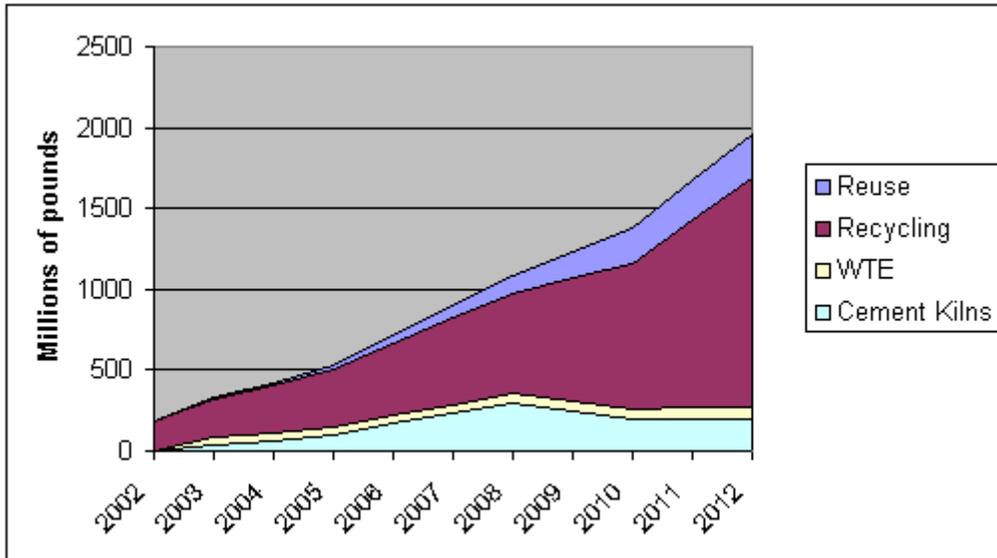
Note 2. The percentage goals in the MOUs do not add up to 40% and are expressed as a range to allow flexibility in achieving and potentially exceeding the 40% diversion goal.

To update the progress towards meeting those goals as reported in the CARE Annual Report 2002, a survey process was conducted by Weston Solutions, Inc. (WESTON) to assess the current status of diversion of post-consumer carpet from landfills. The results of that survey process, as well as a description of the survey methodology, are contained in this section of the annual report.

It should also be noted that the MOU includes goals for government agencies to participate in and promote market development activities for post-consumer carpet, and it is important that this report include an update on the status of those activities. Therefore, WESTON conducted a separate survey of state and federal agencies, and the results of that analysis are discussed later in this report.

The diversion goals contained within the MOU are also shown graphically in Figure 1.

FIGURE 1: MOU DIVERSION GOALS



Note: WTE = Waste to Energy

KEY QUANTITATIVE RESULTS FROM THE CARPET RECOVERY SURVEY

In reviewing the results from the survey of carpet recycling, it is important to put them into context, both in terms of results from 2002 and the overall goals established in the MOU. Therefore, in this discussion of survey results, basic recycling and diversion data will be presented and compared with results from 2002 and the goals of the MOU. Then, more detailed analysis of the 2003 survey results will be presented.

It should be noted that, in this report, material recycled is considered all material recovered and recycled by being remanufactured into the same or different products or by being used as a feedstock in a manufacturing process. Material diverted is all material diverted from landfill, including all recycled material, as well as material sent to waste-to-energy facilities or cement kilns.

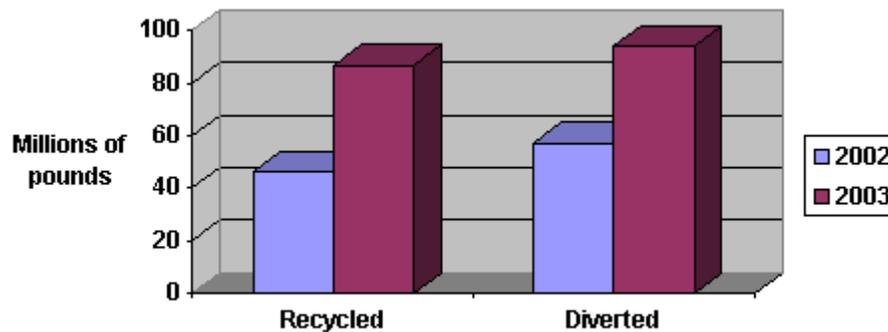
The data in Table 2 show that the quantity of post-consumer carpet reported to be recycled increased from 46.2 to 86.6 million pounds from 2002 to 2003, an increase of 87 percent, and total diversion from landfill increased from 57.2 to 93.7 million pounds, an increase of 64 percent. This increase can be seen graphically in Figure 2.

Table 2 shows a comparison of the quantity of post-consumer carpet recycled and diverted from landfill in 2002 and 2003, on a weight and percentage basis.

TABLE 2
COMPARISON OF 2002 AND 2003 POST-CONSUMER CARPET RECYCLING AND DIVERSION

	Millions of Pounds		Percent of Total Discards	
	2002	2003	2002	2003
Total Discards	4,678	4,828	-	-
Recycled	46.2	86.6	0.99%	1.79%
Diverted	57.2	93.7	1.22%	1.94%

FIGURE 2
COMPARISON OF 2002 AND 2003 POST-CONSUMER CARPET RECYCLING AND DIVERSION



In looking at the comparison between 2002 and 2003 data, it is important to recognize that these are comparisons of results from survey processes; therefore it is difficult to assess how much of the increase is a result of actual increases in recycling and diversion versus an increase in the effectiveness of the survey process. This is particularly true since the surveys conducted in 2002 and 2003 are believed to capture only a fraction of the actual carpet recycling and diversion occurring in the field (see “Assessment of Survey Approach and Results”). Nonetheless, these results show an impressive increase in the amount of material reported to be diverted from landfill and recycled from 2002 to 2003.

It is also important to review the results in the context of the goals established in the MOU. Since specific recycling and diversion rate targets for each year were not explicitly established within the MOU, it is necessary to interpolate between the 2002 and 2005 targets. This results in a recycling rate target of 4.9 percent for 2003 and a total diversion target of 5.9 percent for 2003. When applied to the 4,828 million pounds of carpet projected to be discarded in 2003, these targets can be converted to 235 million pounds recycled and 283 million pounds diverted. Table 3 compares these targets with the results from the carpet recovery survey, and also includes 2002 data for additional comparisons.

TABLE 3
COMPARISON OF 2002 AND 2003 POST-CONSUMER RECYCLING AND DIVERSION WITH MOU GOALS (ALL DATA EXCEPT PERCENTAGES EXPRESSED IN MILLIONS OF POUNDS)

	2002			2003		
	Reported	Goal	Difference	Reported	Goal	Difference
Total Discards	4,678			4,828		
Qty. Recycled	46.2	178	-132	86.6	235	-148
% Recycled	1.0%	3.8%	-2.8%	1.8%	4.9%	-3.1%
Qty. Diverted	57.2	178	-121	93.7	283	-189
% Diverted	1.2%	3.8%	-2.6%	1.9%	5.9%	-4.0%

Note: Currently there is no method to accurately measure the amount of carpet sent to landfills, nor are there any plans to do so in the foreseeable future. The numbers derived for CARE’s purposes (from 2002 through 2012) are estimates, calculated based on the total number of yards shipped from 1988 to 1999, and an average 13-year life expectancy of carpet.

The data in Table 3 show that despite the fact that the level of recycling and diversion reported has increased significantly from 2002 to 2003, the projected increases in discards of used carpet and the percentage goals for diversion and recycling established in the MOU outstrip the increase in reported diversion and recycling. The projected increase in discards and the increasing percentage goals for diversion and recycling mean that the “bar” is set much higher in 2003 than 2002 to reach the MOU goals, and the reported increase in recycling and diversion was insufficient to meet the higher bar.

This result, however, must be considered within the context of the overall response rate for the survey. As with the 2002 data, the response rate for the survey used to establish these figures is so low it is likely that actual recycling rates are significantly higher than documented herein.

Since only approximately 7 percent of the companies surveyed responded in both 2002 and 2003, it is reasonable to assume that there is a substantial amount of carpet recycling that has gone undocumented. For the 2003 data, we know that there is at least some level of additional recycling that is undocumented, since some of the respondents to the survey provided descriptions of the types of activities they perform, but were unable or unwilling to provide quantitative estimates of material recycled. When this information is combined with the low response rate, it is reasonable to state that significant quantities of carpet recycling continue to go undocumented.

With those basic comparisons complete, the results of the 2003 survey can be examined in greater detail. Table 4 presents the 2003 survey results, showing the breakdown by type of diversion from landfill.

TABLE 4
BREAKDOWN OF 2003 DIVERSION OF POST-CONSUMER CARPET
 (FIGURES MAY NOT ADD UP DUE TO ROUNDING)

	Millions of Pounds	As % of Total Diversion	As % of Total Discards
Reuse	0 ^[3]	0%	0%
Recycling	86.6	92.5%	1.8%
Waste-to-Energy	7.1	7.5%	0.1%
Cement Kilns	0	0%	0%
TOTAL DIVERSION	93.6	100%	1.9%

Note 3. The companies that indicated they engaged in reuse did not provide quantitative data about their level of reuse.

The data in Table 4 shows that, for 2003, all of the quantitative results for diversion came from two types of activities: recycling and waste-to-energy, with the vast majority of the diversion occurring through recycling. This should not be interpreted as indicating that diversion through reuse and cement kilns did not occur. With regard to reuse, several firms that responded to the survey indicated that reuse of used carpet was an activity they engaged in; however, they were unable or unwilling to provide quantitative data.

Another type of data gathered during the surveying process was information regarding the flow of used carpet through different types of companies. This information can help future market development efforts and, as a result, the surveying process was designed to extract as much information as possible regarding the flow of material through different types of entities.

To accomplish this goal, survey respondents were asked to characterize the nature of their business into one or more of the following categories (which are listed below along with their definitions):

- Collector – A company that collects used carpet from the point of generation and transports it to a processing or waste management facility.
- Sorting Facility – A facility that separates waste materials (including used carpet) from a mixed waste stream. The end result of this process is used carpet that is separated from other materials.
- Processor – A company or facility that takes used carpet (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 carpet materials and transforms them into other products, or uses them as raw materials in a manufacturing process.

Since material tends to aggregate into fewer, larger facilities as it proceeds from collection through manufacturing, a conscious effort was made to focus the surveying effort on manufacturers – each manufacturer responding to the survey is likely to account for a larger fraction of the total material recycled than each collector, sorting facility, or processor (see “Survey Methodology”). Thus, it is not surprising that 96 percent of the diversion determined through this surveying process came from companies that include “manufacturer” in their description of the functions their company provides related to carpet recycling.

What was perhaps not anticipated is that most of these manufacturers include collection, sorting, and processing in their characterization of the types of operations they conduct: 89 percent of the total diversion was due to companies that characterize themselves as collectors, sorting facilities, processors, and manufacturers. This reflects the reality that the demand for post-consumer has not yet reached the stage to support an independent collection infrastructure. The breakdown of diversion by different types of companies is shown in Table 5.

Another component of the surveying process that was geared towards increasing an understanding of the flow of recycled material was to ask survey respondents the type of companies to which they pass used carpet material after they are done with it. Survey respondents were asked what percentage of the post-consumer used carpet that they handle is passed on to sorting facilities, processors, manufacturers, waste-to-energy facilities or landfills. The results from this portion of the survey are summarized in Table 6 and shown graphically in Figure 3.

TABLE 5
TYPES OF COMPANIES CONTRIBUTING TO 2003 POST-CONSUMER CARPET DIVERSION
 (TOTALS MAY NOT AGREE DUE TO ROUNDING IN MILLIONS OF POUNDS)

	Collector/Sorting Facility/Processor/Manufacturer	Collector/Manufacturer	Collector/Sorter	TOTALS
Millions of Pounds	83.5	6.6	3.5	93.6
Percent of Total Diversion	89%	7%	4%	100%

TABLE 6
DESTINATION OF POST-CONSUMER CARPET HANDLED BY 2003 SURVEY RESPONDENTS
 (TOTALS MAY NOT AGREE DUE TO ROUNDING)

	Sorting Facilities	Processors	Manufacturers	Cement Kilns	Waste-to-Energy	Landfill	TOTALS
Millions of Pounds	15.0	21.2	50.4	0	7.1	5.5	99.2
Percent of Total Handled	15%	21%	51%	0%	7%	6%	100.0%

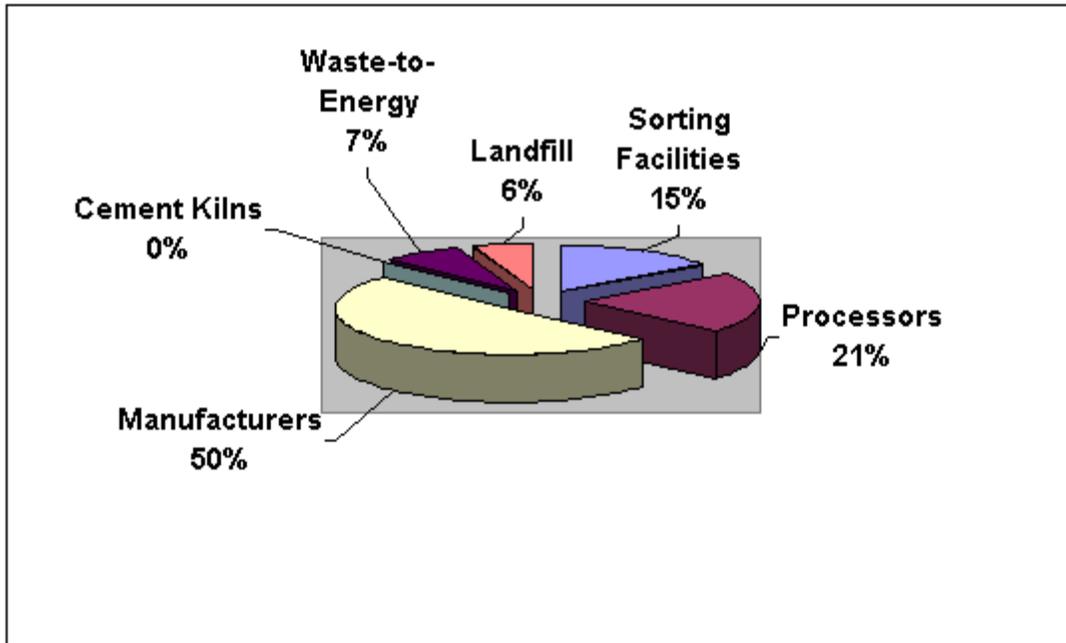
Note: Table 6 shows millions of pounds. The quantity is higher than the quantity reported diverted because it also includes the quantity landfilled.

It can be seen that approximately half of the material handled by survey respondents was sent to manufacturers. This is consistent with the fact that virtually all of the respondents characterized themselves as including sorting, processing, and manufacturing capabilities. This would mean that their end-product would most likely be sent to a manufacturing facility. This also explains the relatively low percentages sent to waste-to-energy and landfill, since most of these types of facilities (sorting, processing, and manufacturing) would only send material that they could not process to waste-to-energy or landfill.

With the information described above regarding the types of companies that handle post-consumer carpet for recycling and the types of companies that they pass that material on to, a flow of carpet recycling can be developed. While the relatively low response rate for the survey prevents one from characterizing this flow as being completely representative of the overall carpet recycling industry, it does provide an interesting insight into how post-consumer carpet gets recycled, at least for the companies that participated in the survey. This flow is illustrated in Figure 4.

FIGURE 3

DESTINATION OF POST-CONSUMER CARPET HANDLED BY 2003 SURVEY RESPONDENTS



While the flows in Figure 4 can appear quite complex, a great deal of information can be derived from review of this diagram. First, it is possible to see the split of “inputs” into the recycling process into the three categories of companies that reported recycling post-consumer carpet. Second, one can get a sense of the split of the ultimate disposition of material at the end of the recycling process (at least the end as far as this surveying project goes). In addition, the diagram is useful in showing what types of companies send material to different types of end-users.

QUALITATIVE FEEDBACK FROM CARPET RECOVERY SURVEY

In addition to the quantitative data gathering that was performed during surveying, survey respondents were also asked what they thought CARE could be doing to assist their business in recycling carpet. Responses ranged from very general to very specific, and were not always directly related to the question of how CARE could provide additional assistance.

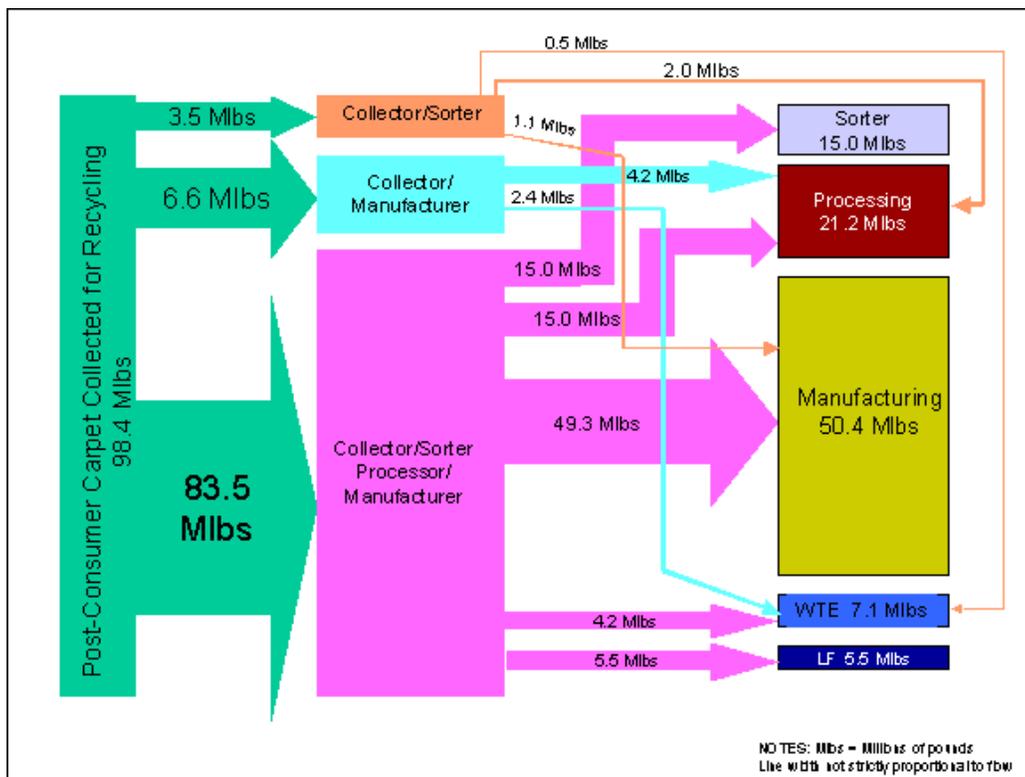
Nonetheless, the responses provide useful insight into the current status of thinking of companies active in carpet recycling. Some of the most relevant comments are summarized as follows:

- One company suggested that the mills must take a bigger role in educating carpet dealers about the costs of recycling so that the dealers do not think that recycling is

so expensive. The company that made this comment notes that they are having a hard time getting response from dealers, despite the fact that they have publicized the fact that they can collect and recycle post-consumer carpet and that the costs are reasonable when compared with disposal.

- A suggestion was made that the consumers of automotive-grade engineering resins be encouraged to buy post-consumer content nylon resins as a way to stimulate market demand.
- Another suggestion was to develop a database of haulers and the type of materials they handle.
- One company noted that its volume of carpet recycled dropped in the second half of 2003 due to lack of markets and that they are currently working with CARE to try to identify new customers for the products this company makes from post-consumer carpet.
- One company requested that CARE provide more data on the logistics of collection and recycling, tipping fees, and availability of material.
- Another suggestion was to get carpet dealer participation in CARE.

FIGURE 4
FLOW OF POST-CONSUMER CARPET RECOVERY REPORTED IN 2003



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, but more so for this type of survey, where there is no logical or reliable way to extrapolate results from respondents to the general population. This means that whatever results are derived from the respondents to the survey are 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 all included in the survey, there is the chance 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 handling the same material.

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, a web-based surveying tool was used to allow respondents to provide data completely anonymously, if they desired. There is no need to e-mail the survey back, so if no contact information is provided, the results cannot be traced back to a particular source. While theoretically a respondent could provide multiple anonymous responses through the web-based tool, they have no incentive to do so – in practice, only one survey response was completely anonymous. In addition, all written and verbal communication with potential survey respondents stressed the confidentiality of data. Simplicity and ease of response is also a key to participation rates. The survey questions were streamlined to the maximum extent possible so that only the most critical data requirements were included, based upon the philosophy that it is much better to have the basic data from a lot of respondents than detailed information on a few (particularly since there is no basis for extrapolation). Review of the draft survey form with CARE members resulted in significant simplification and streamlining of the survey form.
- An incentive can often help to boost participation rates, so the survey was distributed with an offer that the first 50 participants would receive \$20 gift certificates. While it

is difficult to assess if this had an impact on participation rates, we do believe it contributed to respondents providing contact information in their web-based responses.

- Participation rates can also be boosted through the use of multiple means of contact (as well as repeated contacts). Thus, e-mail, regular mail, and telephone were all used as means to contact potential survey respondents.
- To maximize the value of those survey responses received, and to minimize chances of double-counting, it was determined that it would be best to focus surveying resources on large-scale manufacturers that recycle used carpet. While all types and sizes of companies involved in carpet recycling were contacted initially with a request to respond to the survey, resources for telephone follow-up were prioritized to focus more heavily on those entities judged to be large-scale manufacturers handling used carpet. Since most recyclables tend to aggregate as they go through various stages of the recycling process (going from a large number of collectors, to a smaller number of sorting facilities, to a smaller number of processors and, finally, to a smaller number of manufacturers), one can get more “bang for the buck” in devoting resources to gathering data from a manufacturer than from other types of companies.
- To reduce the chances of double-counting, survey respondents were asked to identify the geographic sources of their materials, to the extent they were known. The notion behind this is that if the nature of the survey responses is such that there is a sense that information from two or more companies 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 receive the material that their company ships out after they are done handling it. 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 used carpet through the collection and recycling process.

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

1. A draft survey was developed based upon the principles described above and the basic data gathering needs for the annual report. This draft was reviewed with CARE representatives, revised and ultimately finalized in the form shown in the Appendix to this report.

2. The survey form was converted to a web-based survey and posted on the internet. The survey is accessed by going to a specific URL address that houses the survey, and results are submitted via the internet, without the need for e-mail or paper-based responses. The results are only available to WESTON, as they are password protected, to preserve confidentiality.
3. Using lists of companies involved in carpet recycling provided by CARE, those companies for which a specific e-mail address was known were notified via e-mail about the survey and provided the URL so that they could respond electronically. A total of 54 individuals from 49 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 provide, as well as the opportunity to receive a gift certificate as a “thank you” for their response.
4. All companies within the lists provided by CARE (including those with and without e-mail addresses) were notified of the survey via regular mail. The same basic information contained in the e-mail was transmitted via regular mail. Mail notifications were sent to approximately 356 separate addresses, which represent 309 distinct companies (many companies had multiple addresses and/or contacts). The companies that were included in the survey are listed in the Appendix.
5. Approximately 10 days after the e-mail notifications were sent out, a second e-mail was sent out to those companies that had not responded, reminding them of the opportunity to receive a gift certificate in exchange for their response.
6. Approximately 10 days after the mail notifications were sent out, telephone follow-up was initiated. This telephone follow-up used the prioritization scheme described earlier, where those companies that were believed to be relatively large-scale manufacturers handling used carpet were targeted first for follow-up. When contact was made via telephone, the survey questions were asked and answered verbally.
7. All survey responses, whether by telephone or electronically over the internet, were entered into 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. The data in the database was compiled and analyzed to produce the results described herein. Follow-up calls or e-mails were used to clarify responses that were unclear. Data was reviewed to ensure that it was internally consistent (for instance, to determine that the percentages of material sent to different types of companies added up to 100 percent) and that there were no anomalies (data off by one or two orders of magnitude from what would be expected based upon knowledge of the type and size of company).

ASSESSMENT OF SURVEY APPROACH AND RESULTS

As with the survey performed in 2003 (to gather 2002 data), low participation rate continues to be a problem in gathering data about the status of carpet recycling: 23 firms, or approximately 7 percent of all the firms targeted in the survey responded, the same percentage as last year. However, it should be noted that the philosophy of focusing on larger manufacturers in the data-gathering process did seem to pay off. A significantly higher quantity of recycling was identified for 2003 than for 2002, even though the response rate was similar. Based upon the anecdotal evidence gathered during surveying, this appears to be more the result of targeting bigger companies than a significant increase in recycling by survey respondents in the period from 2002 to 2003.

In addition, it is important to note that e-mail contacts in combination with the web-based electronic surveying tool was the most effective approach for gathering data. The response rate for those companies contacted via e-mail was much higher than that for companies contacted by mail and telephone, despite the fact that multiple attempts were made to gather information via telephone for many companies. In fact, 24 percent of companies contacted via e-mail responded, versus 4 percent of companies contacted via mail and telephone. The ability to respond to the electronic survey through a web link with no return e-mail (thus preserving confidentiality) may have contributed to this high response rate.

In any case, these results seem to indicate that an area to focus on in future surveying efforts is to gather more e-mail contacts for companies involved in carpet recycling.

The combination of low response rate and focusing on larger manufacturers resulted in very low chances for double-counting. If response rates improve in future years, this may prove to be a more significant issue, and require even greater focus on manufacturers and exclusion of data from collectors, sorting facilities, and processors to avoid the risk of double-counting. It is interesting to note, however, that many of the entities responding to the survey control all aspects of the recycling process for the material they handle, thus eliminating the possibility of double-counting that material (in other words, if one company collects, sorts, processes, and uses in manufacturing a certain quantity of used carpet, there is no way for that material to have been included in any other company's quantitative estimates).

Based upon the results from all of the survey efforts conducted to date, several recommendations can be made regarding ways to improve future efforts to quantify post-consumer carpet recycling:

- A greater understanding of the general flow of post-consumer carpet through the recycling industry will lead to an enhanced ability to target data gathering on those entities that handle the most significant volumes of material.

Expanding upon the current level of knowledge in this area prior to the next surveying effort will likely improve the level of data gathered through that next surveying.

- Responsiveness to surveying is improved based upon the “quality” of knowledge about a particular company. For instance, there is a much greater chance for getting a productive response from a company where a contact name, direct telephone number and e-mail address is known than one where all that is known is a company name and general mailing address. Therefore, improving the quality of the contact information for those companies involved in carpet recycling will improve the responsiveness in the next survey.
- The web-based surveying tool appears to be an effective mechanism for surveying, and should be continued. It is most effective when contact is made via an e-mail which contains a link to the web-based survey; so, to the extent that the recommendation above regarding the quality of contact information results in a higher number of companies with specific e-mail address contacts, that should improve overall response rates.
- Surveying via telephone (whether as an initial or follow-up contact) appears to be highly inefficient and ineffective and should probably not be used to any significant extent in the future. The labor devoted to this effort would be better spent in the period prior to surveying trying to improve the quality of the contact information so that more contacts can be made via e-mail.
- Additional outreach, well in advance of the surveying process, may be helpful in establishing a greater number of companies that are willing to provide information about their carpet recycling activities. While costly, face-to-face site visits with key players in the carpet recycling industry could help to establish them as “partners” in the data gathering process and improve the quality and quantity of data gathered in the future. In addition, by maintaining contact throughout the year with key players, the chances for increased responsiveness to a survey are greater.

RESULTS FROM SURVEY OF STATE AND FEDERAL AGENCIES

As was done for 2002, the U.S. Environmental Protection Agency (EPA) and state environmental regulatory agencies were surveyed regarding their efforts to promote carpet recycling. A separate web-based survey tool was created for these agencies, which were contacted via e-mail (more than once in most instances), with telephone follow-up for those agencies that did not respond. Of the 11 EPA offices contacted, 3 responded, and of the 50 state agencies, 12 responded. Based upon the results from those that did respond, and feedback received through follow-up calling, it appears that lack of funding has resulted in a relatively low level of activity in this arena, and as a result, many of the agencies contacted likely felt that they had nothing to report, and so did not respond.

The specific questions posed to these agencies, and a summary of their responses is provided below:

What efforts were made in 2003 to publicize carpet collection/recycling options (e.g., web-sites, pamphlets, press releases, etc.)?

- Two EPA regions indicated that they did not perform any activities to promote carpet recycling and one EPA region indicated it did so through word of mouth.
- Four state agencies reported that they did not do any promotion of carpet recycling in their state (in some cases citing lack of funding).
- Other state agencies noted a range of activities, such as inclusion of carpet recycling options on an agency-maintained web-site, signing an MOU for carpet stewardship, providing a grant for an innovative technology that could use carpet as a source material, funding a non-profit that compiles recycling resources and mention of carpet recycling options at meetings and conferences.

Have any attempts been made to quantify the level of carpet recycling in your state/region? If so, can you either summarize the results or provide information about how to obtain these results?

- None of the EPA regions indicated that they had made any attempts to quantify carpet recycling.
- Only one state indicated a successful effort in obtaining quantitative information on carpet recycling: Utah reported that in 2002, five counties reported that 200 tons of carpet was recycled.

Are you aware of any dedicated carpet collection efforts within your state/region (e.g., designated collection days for setting out used carpet)? If so, is there any data on the quantity of material collected and/or recycled?

- One EPA region indicated an awareness of carpet collection efforts through contact with the states; a second region was aware of some specific efforts, but that those have ceased due to lack of markets; and the third region indicated that they were not aware of any dedicated carpet recycling efforts.
- Two states were aware of specific companies that were collecting and/or recycling carpet in their states – the other states indicated that they were not aware of any dedicated carpet collection or recycling efforts.

What efforts were made in 2003 to promote business development related to carpet recycling (e.g., grants, training, education, etc.)? Does this include efforts to promote small business development in this field?

- The three EPA regions indicated that they did not make any efforts in 2003 to promote business development related to carpet recycling.
- Several of the states noted that they have low-interest loans and/or grant programs that are available to recycling companies, including those that recycle carpet, but did not report efforts specifically targeted at carpet recycling.
- One state indicated that it provided financial assistance to a “nylon board” manufacturer.
- Four states indicated that there were no efforts in 2003 to promote business development related to carpet recycling.

Were any actions taken in 2003 to promote or facilitate waste-to-energy as an alternative to landfilling of carpet? If so, please describe.

- The three EPA regions responded that no actions were taken in this regard.
- Most of the states indicated that no efforts were made to promote waste-to-energy for carpet, although a couple of states noted an interest in the burning of carpets in cement kilns.
- Two states noted that it is not their policy to promote incineration as an alternative to landfilling.

Are there standards for recycled content of carpet procured by your agency? If so, do they include minimum post-consumer recycled content requirements? If not, are there more informal efforts to promote procurement of carpet with recycling content?

- Two EPA regions noted that there is a federal procurement guideline for polyester carpet that includes post-consumer content recommendations and that a guideline for nylon carpet is in development.
- Four states indicated that there are specific state procurement guidelines for purchase of carpet with recycled content, and in two of those states, post-consumer requirements were noted as being included.
- One state noted that it had tried to develop a procurement guideline in the past, but did not find specific-enough information to create the guideline.
- Two states noted that carpet with recycled content is available for purchase by state agencies through a state contract.

How much money (if any) did your agency spend in 2003 on promotion of carpet recycling?

- The three EPA regions indicated that no money was spent on promotion of carpet recycling.
- Two states noted that they had provided grants related to carpet recycling – one for \$200,000 and the other for \$65,000.
- One state indicated that it had paid \$1,500 for CARE sponsorship.
- The remainder of the states indicated that no money was spent on promotion of carpet recycling.

Does your agency receive inquiries regarding carpet recycling? If so, please characterize the nature of these inquiries and the type of response provided.

- Two EPA regions indicated that they received no inquiries regarding carpet recycling, and one EPA region indicated that they received questions about where to recycle carpet and if grants are available for carpet recycling.
- Four states indicate very few questions are received about carpet recycling and one state indicated no questions had been received.
- The remainder of the states indicate that they do get inquiries and they include topics such as where to recycle carpet, status of grant availability for carpet recycling and questions about markets for recycled carpet.

Please describe any other initiatives undertaken by your agency in 2003 to help promote carpet recycling.

- The three EPA regions did not have other initiatives to describe.
- A number of states described a variety of initiatives, including: working with several companies on use of carpet as a possible feedstock in their manufacturing; initiation of development of a statewide carpet specification; working with companies on market development; promoting availability of state's financial assistance program as well as CARE grants; and encouraging other organizations to ratify the national carpet MOU.
- Several states cited their participation in CARE.

PRODUCT AND MARKET DEVELOPMENT ACTIVITIES

Given the current status of development in technology for recycling carpet back into carpet, non-carpet products containing post-consumer carpet content will continue to play an important and growing role in efforts to CARE's diversion targets. Creation of demand for such products will be a critical key to the success of CARE. This is a specific area where the federal government and state agencies can leverage their impact to help CARE.

While 2003 started off strong, in June the effort was hit with a major setback. The bankruptcy filing by Polyamid 2000 not only closed the only remaining major production facility for the recycle of nylon 6 and nylon 6,6, it almost resulted in the closure of the industry's single biggest recycler, L.A. Fiber Company. However, L.A. Fiber Company has proven resilient, as they have in the past, by finding new outlets for their post-consumer waste stream. While not back to previous levels, L.A. Fiber Company is back on track and looking at new business opportunities.

Relatively few new products emerged in 2003; however, several significant developments took place. Nyloboard LLC was catapulted from a small lab scale development product to a high potential product line when a California entrepreneur stepped in and bought out the Nyloboard patents, and erected a world class, 170,000 square foot factory which is expected to come on-line in the second quarter of 2004. A significant focus on new product development is also underway and it is expected that Nyloboard will continue to make progress in the coming year.

Nylon Board Manufacturing in Minnesota underwent a major extrusion expansion to increase both capacity and quality. The new line is not yet sold so NBM is looking for business. They also have a new roofing tile product which is a slate alternative. The first installation of this new product is at the Auburn Golf clubhouse. Visit NBM at www.nylonboardmanufacturing.com.



FIGURE 4. AUBURN CLUBHOUSE

TieTek announced a major equity placement resulting in a commitment to construct two new



FIGURE 5. TIETEK RAILROAD TIES

railroad tie lines. Both lines are under construction in Texas and should be on line the second quarter of 2004. This will result in a dramatic increase in tie production capacity. We continue to work with TieTek on testing and incorporation of post-consumer carpet in their ties.



FIGURE 6. TRIMAX® PYLINGS FROM US PLASTIC LUMBER

US Plastic Lumber continues to be an active partner with CARE in the development of both rail tie and composite lumber products. In addition, work is underway to incorporate post-consumer carpet into their line of Trimax® products. CARE's current plan is to have routine use of post-consumer carpet fiber being incorporated into US

Plastics Lumber products in the third quarter of 2004.

Products like GeoHay, Hummer Turf, garden stepping stones from Blue Ridge Recycling, plastic parts, etc. continue to show encouraging signs of growth as an outlet for post-consumer carpet.



FIGURE 7. COMPOSITE DECKING FROM US PLASTIC LUMBER



FIGURE 8. BLUE RIDGE RECYCLING GARDEN STEPPING STONE

INDUSTRY PRODUCTS AND PROGRAMS

INVISTA™ operates the oldest carpet recycling program accepting carpet regardless of fiber type, manufacturer or backing type. They will certify that the carpet does not end up in a landfill. The INVISTA™ reclamation facility is certified by an independent third party, Scientific Certification Systems. The INVISTA™ Reclamation program has recycled over 100 million pounds of post-consumer carpet and can provide customers with chain of custody verification. INVISTA™ has nationwide collection infrastructure along with recycling capability. Post-consumer carpet recycled products include carpet cushion, automotive parts, natural turf based roofing tiles, furniture, pallets, filtration pipes, and boards. Antron® carpet fibers are certified by SCS and contain post industrial recycle content.

INTERFACE has ReEntry, a program to facilitate landfill diversion as well as GlasBac®RE which uses recycle content in the backing along with recycle content face yarn—this product is third party certified. Interface also offers two residential tile product lines that are made with 100% PLA yarn, a renewable and biodegradable yarn system made from corn.

HONEYWELL Savant® fiber is MBDC certified as are five of their processes. Their Enviro6ix fiber contains a minimum of 25% recycle content. In addition, Honeywell continues to operate their Arnprior, Canada facility for depolymerization of post-industrial and post-consumer nylon 6.

J&J/INVISION produces Encore®SD system. Karakul is a solution dyed nylon product which contains a total of 44% by weight of post-industrial content.

MANNINGTON has provided recycled content in their carpet and VCT products for several years. Efforts continue to increase those levels while being committed to assuring optimum product performance and durability. More recently, Mannington introduced Artcraft, a unique carpet product which re-uses 100% post-production yarns that previously were down-cycled. New product introductions for 2004 combine recycling technologies from both soft surface and hard surface operations.

MILLIKEN continues to expand its Earth Squares program. This unique program takes back old carpet tiles and not only refurbishes them but can actually add new color and patterns. Milliken has introduced an adhesive-free system for installation called TractionBack. TractionBack eliminates the need for adhesives or floor sealers when installing carpet tile. Milliken's commitment to PVC free backing systems has continued with the introduction of a hardback tile backing called Everwher Plus.

MOHAWK INDUSTRIES makes a product line called Colorstrand Infinity—a recycle content nylon 6 fiber. **LEES CARPET** (now a subsidiary of Mohawk Industries) manufactures a backing system called Unibond®RE with recycle content using both post industrial and post-consumer materials.

Innovative process development work in the carpet industry has also resulted in new products and programs. **SHAW INDUSTRIES** has developed EcoWorx, a polyethylene backed carpet system explicitly designed to be recycled in the future. Shaw S|C received a Presidential Green Chemistry Award from the EPA for this product development.

SOLUTIA supplies Ultron® ReNew fiber containing a minimum of 77% post-industrial content. In addition, Solutia sponsors their Partners for Renewal program to foster collaboration with entrepreneurs to help facilitate their success.

C&A, a TANDUS company, produces ER3, a recycle content backing system for PVC tile and high performance 6 foot goods. All ER3 tiles have a minimum of 25% post-consumer content. C&A recently introduced ER3 Cushion, a recycled content cushion product for 6 foot broadloom applications.

We know that there are several initiatives underway looking at technology to close the loop for nylon recycling via the application of dissolution technology for the recovery of pure nylon polymer. This material is derived from post-consumer nylon carpets and can be respun into white carpet fiber thus closing the loop. Dissolution is a much more environmentally friendly and economically feasible approach compared to depolymerization—or unzipping as it is sometimes referred to.

CARE ACCOMPLISHMENTS IN 2003

The year 2003 saw a continuation of difficult economic times for both industry and agency partners. Resources were tight and targeted on high priority projects and customer needs. Despite tough times, CARE made significant progress in creating the programs and infrastructure that should position the industry well as the economy returns to a more normal rate of growth. Considerable work was done in the first four months of the year in preparation for CARE's first and highly successful annual meeting.

The meeting was held in Sandestin, Florida and attracted 50 attendees. The following list summarizes key programs that were developed in time for the first meeting.

- CARE Sponsorship program created (a way to fund CARE)
- First year sponsors contributed over \$246K
- PBS video produced and seen by an estimated 48M people in March 2003
- First Annual Meeting in April 2003
- Grant process created
- First three CARE Grants totaling \$92K awarded
 - ♦ TieTek, Inc.
 - ♦ Georgia Composites
 - ♦ Massachusetts Building Materials Resource Center
- Florida and Georgia sign MOU at First Annual Meeting
- CARE Recycler of the Year award – L.A. Fiber Company
- CARE Person of the Year award – Dr. P. Robert Peoples

It is truly an honor and a pleasure to recognize L.A. Fiber Company for their distinguished work and effort in the arena of recycling post-consumer carpet. It is just the sort of innovative thinking and concept which L.A. Fiber brings to the table that will ultimately play a large role in helping CARE forge ahead in meeting the goal of 40 percent landfill diversion of post-consumer carpet by 2012.



RON GREITZER, PRESIDENT
L.A. FIBER COMPANY
CARE RECYCLER OF THE YEAR 2002



P. ROBERT PEOPLES, PHD
EXECUTIVE DIRECTOR, CARE
CARE PERSON OF THE YEAR 2002

Dr. Robert Peoples, PhD, current Executive Director of CARE and Sustainability Director for CRI, was honored as CARE Person of the Year 2002 for his work within the CARE organization. Dr. Peoples served as co-chairman for the Marketing Development Committee. We appreciate Bob for his tireless and voluntary effort. CARE is a completely voluntary organization and it could not function without the Bob Peoples of the world.

In addition, many presentations were made around the country to architects, designers, specifiers, state agencies, etc., in an effort to get the word out and educate people on these new products to stimulate demand. Subsequent to the April meeting, progress continued:

- \$35K EPA Funding Grant
- CARE booth developed for use at trade shows
- CARE (thru The Carpet and Rug Institute) secured a \$300K DOE grant for cement kiln trials
- First Executive Director came on Board January 1, 2004
- Development of 5-year strategic plan and staffing goals

CONCLUSION

Despite a significant amount of good work and many accomplishments, including a 64 percent increase in the documented level of diversion from landfill from 2002 to 2003, CARE did not hit the 2003 diversion target of 5.9 percent. This is disappointing. However, there is a silver lining. First, CARE has a strategic plan now approved by the Board with milestones defined to help guide the organization and measure progress at the implementation level. Second, CARE has outlined staffing and funding levels required to execute the strategic plan. Third, several options have been developed for taking CARE to the next level of funding—a level designed to move CARE into a real performance-enabling organization. Fourth, the economy is improving and this means money and a willingness to tackle new challenges will reemerge. CARE has laid an excellent foundation which will allow the organization to collaborate and facilitate the development of new products and processes. CARE will get the word out to both the commercial

and residential worlds about the sustainable options now becoming available. Also, the working partnership between CARE and Market Transformation to Sustainability (MTS) on the Sustainable Textile Standard and Leadership in Energy and Environmental Design (LEED) will encourage the necessary migration to the kinds of products envisioned by CARE.

For additional information about CARE, the latest CARE News, and a digital copy of the CARE database of green products and technologies (Green Products and Contacts Matrix), visit the CARE website at www.carpetrecovery.org.

CARE SPONSORSHIP PROGRAM

Care successfully implemented the sponsorship program levels of participation as follows:

Sponsorship	Contribution Amount	Sponsoring Companies
Sustainability Leadership	200% of the Corporate Sponsor level	<ul style="list-style-type: none"> ◆ Antron® Carpet Fiber ◆ Interface Flooring Systems
Green	150% of the Corporate Sponsor level	<ul style="list-style-type: none"> ◆ Honeywell Nylon ◆ J&J / Invision
Corporate	Companies >\$3B in carpet sales \$30,000 Companies \$1B-\$3B in carpet sales \$20,000 Companies \$250M- \$1B in carpet sales \$10,000 Companies with <\$250M in carpet sales \$5,000 State governments \$2,000 Nongovernmental organizations (NGOs) \$1,000 Equipment suppliers \$15,000 Materials suppliers \$10,000 Entrepreneurs in kind All others \$5,000	<ul style="list-style-type: none"> ◆ bp Fabrics & Fibers ◆ Environmental Recovery and Consolidation Services (ERCS) ◆ EPA Solid Waste Division ◆ Mannington ◆ Milliken & Company ◆ Mohawk Industries ◆ SB Latex Council ◆ Shaw Industries ◆ SI Flooring Systems ◆ Solutia ◆ Tandus



APPENDIX

LISTING OF COMPANIES INCLUDED IN SURVEY

NOTE: Some companies had multiple facilities and contacts in the database of contacts used for the survey. For simplicity, each company is listed only once in the following list:

1st Choice Carpets International
A & D Carpets
A. West and Company
ACF
Admiralty Mills Inc.
ADVAC
Advanced Textile Recycling
Advance Tufting
American National Carpet Mills, Inc.
American Recycling Co., Inc.
American Rug Craftsmen, Inc.
American Tufted Carpet
Apache Mills, Inc.
Artisans, Inc.
Aston Mills, Inc.
Astro Putt, Inc.
AstroTurf® Industries, Inc.
Atlas Carpet Mills Inc
Auto Custom Carpet, Inc.
Avanti Corporation
B & L Tufters
B & V Sales
Badger Industries, Inc.
Barrett Carpet Mills
BASF
Beaulieu Group LLC
Beaulieu of America
Bennytex Carpet Mills, Inc.
Bentley Mills, Interface Inc.
BFI
Bloomsburg Carpet Industries, Inc.
Blue Ridge Carpet
Blue Ridge Commercial Carpet
bp Amoco Fabrics & Fibers
BRIGHTEX USA INC
Brintons US Axminster In
Brumlow Mills, Inc.
Buckner Industries, Inc.

Bulloch Candler Service Center
Burlington House Area Rugs
Burlington Industries, Inc.
Burtco Enterprises Inc
Burtco Tufting
C'Board USA, Inc
C & E Contract Tufting
C & L Industries, Inc.
Camelot Carpet Mills, Inc.
Capel, Inc.
Caravelle Contract Tufters
Carousel Carpet Mills, Inc.
Carpet Crafts, Inc.
Carpet Cushion Council
Carpet Cycle LLC
Carpet Solutions
Carpeton Mills, Inc.
Carriage Industries, Inc.
Carroll Mills Inc.
Carter Carpets, Inc.
Cascade Carpet Mills, Inc.
Catalina Carpet Mills Inc
Catalina Rug Company
CDC Commercial Carpet, Inc.
Centennial Carpet Mills
Challenger Carpet Mills
Challenger Industries, Inc.
Challenger Manufacturing
Champion Polymer
Cherokee Carpet Industries
Chroma Systems
Clearwater Carpet Mills, Inc.
Collins & Aikman Floorcovering, Inc.
Colonial Braided Rug Company
Colonial Carpet Mills, Inc.
Colonial Mills, Inc.
Colony Crafts, Inc.
Columbia Recycling Corp.

Commercial Carpet Concepts
Concord/Aldon Industries, Inc.
Contract Color Works, Inc.
Contrax, Ltd.
Convanta Secure Services
Couristan, Inc.
Creative Accents
Creative Carpets Inc
Creston Carpet Mills LLC
Creston Carpet Mills, Inc.
Cross Plains Tufters
Custom Graphics
Cycle-Tex Inc.
Da-Co Industries, Inc.
Dalton Carpet & Cushion, Inc.
Daltonian Flooring Inc
DC Tufters
Dellinger, Inc.
Dixie Group, The
Domestic & Export Carpet, Inc.
Double S Carpet, Inc.
DOW Chemical
E & S Carpets
Easton Carpet Mills
Eddi Wowler
Edward Fields Inc
Embassy Industries, Inc.
Emerald Carpets, Inc.
EMM Carpet Tufting
Environmental Recycling Alt.
EnvironX
EPA-States
ERCS
Evergreen Nylon Recycling
Excel Carpet Mills, Inc.
Exclusive Industries
F. Schumacher & Co.
Fabrica International
Fantastic Tufters, Inc.
Fibertex Carpets
Fibre Processing Co.
FiberVisions Inc.
Fieldcrest Cannon, Pillowtex

Fieldturf & Carpets, Inc.
Filipe Braided Rugs
Flagship Carpets, Inc.
Floor Visions, Inc.
Florentine Carpets
Fortune Contract Inc
G & F Carpet Mill
Georgia Composite
Georgia Tufters, L.L.C.
Glen Eden Wool Carpets, Inc.
Glenoit Mills, Inc.
Glenwood Tufters, Inc.
Gold Label Carpet Mills
Golden Star, Inc.
Graphic Tufting Center, Inc.
Graphictec, Inc.
Grass-Tex, Inc.
Gulistan Carpet, Inc.
H & B Tufters
Hagaman Carpet Industries, Inc.
Hamilton Carpet Industries
Hammontree Tufters
Healthier Choice Carpet and Cushions, Inc.
Hokanson, Inc
Holly Craft Carpets, Inc.
Hollytex Carpet Mills, Inc.
Honeywell
Ideal Tufters
Impact Carpets, Inc.
Interface Americas Floorcoverings Products Group
Interface, Inc.
Invista Reclamation (Dupont)
J & B Tufting
J & J Industries, Inc.
J & J/Invision
J. L. Benson Company
JaSue Carpet
JCH International
JMG Carpets, Inc.
Jostes Carpet, Inc.
Joy Carpets, Inc.
JRC Industries

K & J Carpet
K & K Tufters
Karastan
Kendrick Carpets, Inc.
Kenneth Lacey Mills, Inc.
Kleen-Tex, Inc.
Lacey Mills Inc.
Lacey-Champion Carpets
Lady Madison Industries, Inc.
Langhorne Carpet Company
Lanier Carpets
LaSan Tufting, Inc.
Lear Corporation
Lees Carpets/Burlington Ind. Inc.
Len-Dal Carpets
Len-Dal Carpets, Inc.
Lexmark Carpet Mills, Inc.
Log Cabin Company Inc.
Los Angeles Fibers
Lowe's Carpet Corporation
Ludlow Composites Corporation
Lyle Industries, Inc.
Madison Industries, Inc.
Magee Reiter Automotive Systems
Mainline Exhibitor Carpet
Manhattan Carpets, Inc.
Mannington Commercial Carpets, Inc.
Mannington Mills, Inc.
Maples Industries, Inc.
Marquis Industries, Inc.
Mar-Thac Custom Carpets
Martin Color-Fi, Inc.
Mary Ann Industries
Masland Industries
Master Touch Carpets, Inc.
Mastercraft Carpet Mills, Inc.
Masterweave Commercial Carpet
Matrix Tufters
Mats, Inc.
Mattel Carpet
Merida Meridian Inc
Merit Hospitality
Michaelian & Kohlberg, Inc.

Mountville Mills Inc.
New River Artisans
North American Carpet Mills
North Georgia Textile Recycling
Northwest Carpets, Inc.
NyloBoard
Nylon Board –MN
Options
Options Tai Ping Carpets Inc
Orian Rugs, Inc.
Oriental Weavers of America
P & P Tufters
PacifiCrest Mills
Paragon Mills, Inc. dba Beacon Carpets
Passport Carpets, Inc.
Pavilion Industries, Inc.
Peeler Rug & Printing
Pike Companies
Pilgrim House Rugs
Pillowtex Corporation
Pinion Rug Company
Playfield International, Inc.
Polytec
Preferred Tufting, Inc.
Prestige Mills, Inc.
Product Concepts Residential
Product Concepts Residential, LLC
Professional Contract Sales, Inc.
Proffitt Textile Company, Inc.
ProGroup, Inc.
Pyramid Industries, Inc.
Quality Mat
R & N Industries
R & R Textile
R. D. Stallion, Inc.
Rainbow Carpet Mills, Inc.
Rainbow Rug, Inc.
Recycled Materials, Inc.
Redrock Custom Carpets
Regal Carpets, Inc.
Regal Rugs, Inc.

Remington Industries, Inc.
Rhody Rugs
River Associates, L.L.C.
Robin Rug, Inc.
Rodeo Carpet Mills, Inc.
Rosewood Rug Inc.
Royalty Carpet Mills Inc
Rugmaker/D.R.C. Company
S & S Mills, Inc.
S.E.T. Enterprises, Inc.
Savnik & Company
SB Latex Council
Scott Carpet Mills
Selectech Inc.
Shaheen Carpet Mills, Inc.
Shaw Industries, Inc. Plant 20
Sherwin-Williams Company
Signal Textiles, Inc.
Solutia
Southeast Whitfield Carpet
Southern Carpet Mills
Southwest Recreational Industries
Spinning Wheel Rugs
Springs Industries, Inc.
Springs Regal Inc.-Ellijay
Stanton/Royal Dutch Carpet Corp.
Star International, Ltd.
Stevenson Carpets, Inc.
Structured Backing, Inc.
Sunrise Studio
Superior Manufacturing Group
Supreme Carpet, Inc.
Sutherlin Carpet Mills
Syntec Industries, Inc.
Tai Ping Carpets and Rugs
Talisman Mills
Textile Concepts, Inc.
Thorndike Mills, Inc.
TieTek
TKO Polymers
Tribute Carpets
Troy Mills, Inc.
Tufted Graphics, Inc.

U. S. Axminster, Inc.
United Technical Products, Inc.
USA Berbers
Value Carpets, Inc.
Variations Carpet Mills
Varsity Rug Co. Inc.
Vogue Enterprises, Inc.
W & H Mfg., dba Preferred Carpets, Ltd.
Waste Management
Weavetex Mills, Inc.
Weave-Tuft Carpet Corp.
Wellman, Inc.
Woolshire Carpet Mills, Inc.
Worldwide Enterprises

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www.carpetrecovery.org



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