

## **Carpet Recycling Survey Results May 17, 2011**

### **EXECUTIVE SUMMARY**

Following the February Northwest Carpet Recycling/Processors Networking Meeting, hosted by King County LinkUp, Seattle Public Utilities and Washington State Department of Commerce, LinkUp asked Colehour+Cohen to survey the participants and other interested parties to obtain additional feedback on the current status of the carpet recycling industry in the Northwest. The surveys were conducted via phone calls during April of 2011.

The survey's respondents were business owners and business community members interested in furthering the local carpet recycling industry. The following individuals contributed to the feedback included in this summary:

- Vern Brown, Environmentally Conscious Recycling
- Rich Castle, ATR (Applied Thermoplastics Resources)
- Bruce Clark, United Recycling & Container
- Terry Gillis, Recovery 1
- Todd Johnson & Craig Vierling, CDL Recycle
- Pete Keller, Republic Services
- Troy Lautenbach & David Bader, Lautenbach Industries
- Tony Rounds, Fibres International
- Todd Smith, ReNu Recycling Services
- Matthew Stern, Waste Management
- Noel Stout, RE Store

The survey collected data on the current and prospective carpet recycling practices in the Pacific Northwest. Nearly all responding companies indicated that they are already active in the carpet recycling supply chain. The majority of those who are not already participating in the recycling supply chain indicated that they are interested in future participation. Additionally, about 50% of respondents indicated a desire to expand their services related to the carpet recycling supply chain.

In addition, the survey collected feedback on the carpet materials which respondents currently recycle and materials which companies may consider processing in the future. Respondents indicated that residential and commercial carpets are the materials that companies are most interested in processing. There is less interest in processing related materials such as carpet pads. However, if end materials exist, companies indicated they would collect and process these related materials.

Currently, most recyclable carpet materials are sent for processing to the Southeastern region of the United States. One or more regional carpet recycling facilities in the Northwest could lead to an increase in carpet recycling supply chain participation. Two companies indicated they have current plans to establish or to expand a carpet recycling facility in the Northwest. Financing for new or expanded facilities is not a barrier for respondents of this survey.

A couple of respondents said that proper preparation of carpet for recycling is a key area that needs focus and attention and that asbestos contamination is a serious concern.

The survey showed that the Northwest has an established industry for carpet removal, sorting and preparation for processing. However, it is apparent that the industry is less robust in the areas of processing and end markets. Several participants mentioned that establishing end markets is the key to getting the carpet recycling system moving in the Northwest.

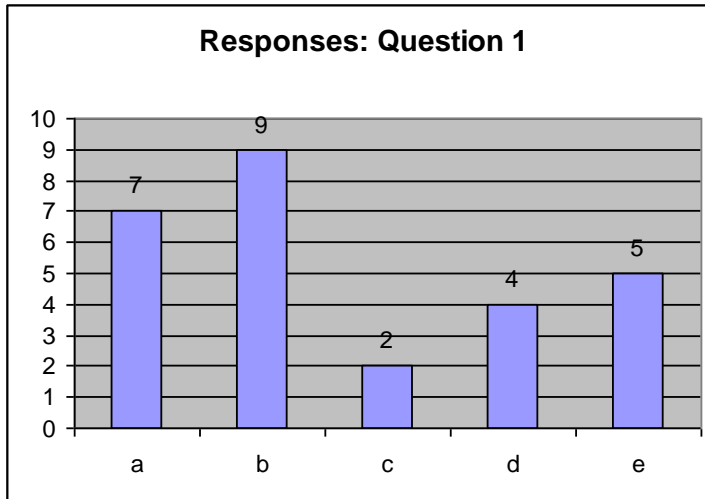
## SURVEY RESPONSES

### 1. If you're already active in carpet recycling, which category of the supply chain do you currently operate in? (You may check all that apply)

- a) **Removal** of carpet from floors, deliver to sorting/ recycling facilities. (responses: 7)
- b) **Sorting** carpet by fiber type; may include baling or packing in 'flats'; Prepare carpet for chemical and/or mechanical processing. (responses: 9)
- c) **Processing** carpet by chemical and mechanical methods separating fiber from backing, etc.; densifying, 'condensing', melting to produce pellets or other feedstock for molding, fiber manufacturing, filler, backing, etc. (responses: 2)
- d) **Manufacturing** new products from recovered carpet materials (new carpet, molded plastic products, carpet fiber, carpet cushion, etc.) (responses: 4)
- e) **Other** (responses: 5; respondents indicated other activities)

#### Notes:

- A respondent is not currently a processor of carpet, but [is] willing to collect carpet for recycling and work in partnership with local processors.
- A respondent is currently providing transportation of collected carpets.
- A respondent said that "we will be [active] from collection through end market. Collecting, processing-sending fiber to Georgia, looking at how to dispose carpet, take carpet pad, tile and commercial carpet. Carpet recycling facility in Seattle".
- A respondent provides containers to customers who need to recycle carpet and also sorts out carpet from other C&D debris and delivers in containers to carpet recyclers.
- A respondent said they remove carpet for reuse and resale in its building material salvage stores.



**2. If your company is not currently handling carpet for recycling, is there interest in participating in the carpet recycling supply chain in the future?**

- a) Yes (responses: 4)
- b) No (responses: 2)

**3. If you answered yes to #2, of the processes below, where would your company most likely enter the market? Check all that apply**

- a) **Removal** of carpet from floors, deliver to sorting/ recycling facilities. (responses: 2)
- b) **Sorting** carpet by fiber type; may include baling or packing in 'flats'; Prepare carpet for chemical and/or mechanical processing. (responses: 2)
- c) **Processing** carpet by chemical and mechanical methods separating fiber from backing, etc.; densifying, 'condensing', melting to produce pellets or other feedstock for molding, fiber manufacturing, filler, backing, etc. (responses: 2)
- d) **Manufacturing** new products from recovered carpet materials (new carpet, molded plastic products, carpet fiber, carpet cushion, etc.) (responses: 1)
- e) **Other** (responses: 2; respondents expressed opinions [detailed under notes below])

**Notes:**

- A respondent said that "the last eight loads we've sent on for processing, three had suspected asbestos, two were confirmed. The risk is tremendous".  
A respondent said that "removal as a separate service would only be in the case that the carpet is in good enough condition for us to resell."

**4. Do you see your operation vertically integrating into other aspects of the supply chain within 1 to 2 years?**

- a) *No, I do not intend to expand into other services.* (responses: 7)
- b) *Yes, I do plan to integrate other aspects of the supply chain into my operations.* (responses: 6)
- c) *I'm not sure.* (responses: 4)

**5. If you answered B to question #4, which aspects of the supply chain do you intend to expand within 1 to 2 years? Check all that apply.**

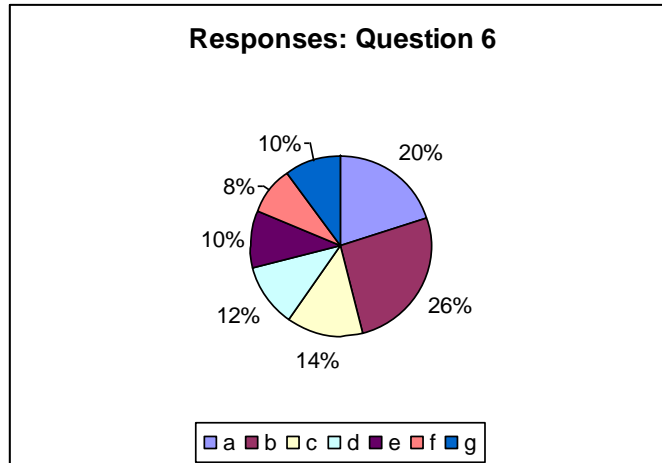
- a) **Removal** of carpet from floors, deliver to sorting/ recycling facilities. (responses: 1)
- b) **Sorting** carpet by fiber type; may include baling or packing in 'flats'; Prepare carpet for chemical and/or mechanical processing. (responses: 3)
- c) **Processing** carpet by chemical and mechanical methods separating fiber from backing, etc.; densifying, 'condensing', melting to produce pellets or other feedstock for molding, fiber manufacturing, filler, backing, etc. (responses: 3)
- d) **Manufacturing** new products from recovered carpet materials (new carpet, molded plastic products, carpet fiber, carpet cushion, etc.) (responses: 2)

**6. What materials are you planning to process? (Answer all that apply)**

- a) *Used Residential carpet* (responses: 12)
- b) *Used Commercial carpet* (responses: 15)
- c) *Used polyurethane carpet pad* (responses: 8)
- d) *Used mixed fiber felt cotton pad* (responses: 7)
- e) *Recovered nylon* (responses: 6)
- f) *Recovered polypropylene* (responses: 5)
- g) *Recovered PET* (responses: 6)

**Notes:**

- A respondent indicated that "right now, I'm not interested in doing that. But if someone comes in and says 'I'll take the carpet', I would do it. I need the end market to be sufficient to make it worthwhile".

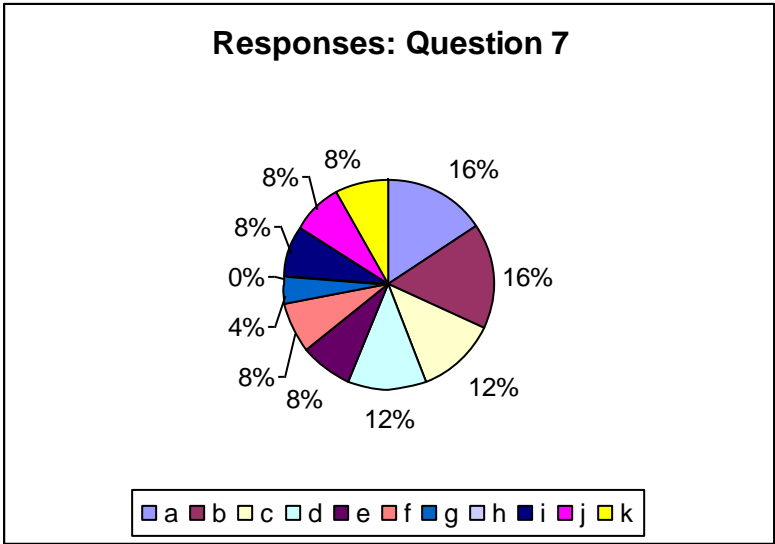


**7. What are your company's carpet-derived products and by-products? Check all that apply**

- a) *Recovered nylon fiber* (responses: 4)
- b) *Recovered PET fiber* (responses: 4)
- c) *Recovered polypropylene* (responses: 3)
- d) *Recovered calcium carbonate* (responses: 3)
- e) *Nylon flake or pellets from recovered nylon* (responses: 2)
- f) *PET flake or pellets from recovered PET* (responses: 2)
- g) *Plastic compounds* (responses: 1)
- h) *Carpet carcass* (responses: 0)
- i) *Recovered polyurethane foam* (responses: 2)
- j) *Mixed fiber from recovered carpet or felt pad* (responses: 2)
- k) *Other (please specify)* (responses: 2; respondents provided additional comments (detailed in notes below))

**Notes:**

- A respondent indicated that "We currently do not have any products. We are interested in performing research for companies that need information in order to make their own products."
- A respondent included auto parts- injection molding, medical.



**8. If you have plans for establishing a carpet recycling facility or expanding your current recycling facilities, will you require a source of financing from outside of your company?**

- a) *Yes* (responses: 2)
- b) *No* (responses: 6)
- c) *Not sure* (responses: 4)
- d) *Prefer not to answer* (responses: 0)

**9. If you answered yes to question #8, are you currently able to secure outside financing?**

- a) *Yes* (responses: 2)
- b) *No* (responses: 0)
- c) *Not Sure* (responses: 0)
- d) *Prefer not to answer* (responses: 0)
- e) *Additional comments* (responses: 0)

**10. Please share with us any additional comments or concerns regarding the development of carpet recycling capacity in the Pacific Northwest.**

- Respondent- Things that will help:
  - Traffic patterns- time to travel-big thing for tractors
  - Have talked to power folks
  - Spending a lot of time looking at how to have an outlet for everything that is brought in. Some may be trash (10-25%)
  - Beneficial program for retailers
  
- Respondent- “We started this process a long time ago, but it turned into no one can recycle it. We need someone to take everything. Because what happens is different types of carpet get combined all in one dumpster and then I’m left with disposing with the stuff I can’t use. N66 carpet is okay, but we need more than that- if there was a viable carpet that everyone could recycle, it would be beneficial.”
  
- Respondent- Teaching installers education of handling materials.
  - Consumers, carpet installers vs. demos.
  - Demos leave carpet as drop cloth, carpet covered with paint is not usable.
  
- Respondent- “Not sure if generators are on this list, we work up and down the I-5 corridor and have been able to assist in collection in that corridor.”
  - Side note: “From a processor standpoint, the carpet needs to be clean, not used as a drop cloth, and dry.”
  
- Respondent- “We would love to promote reuse before recycling.”
  - “This group is useful for connecting us with other similar organizations.”
  
- Respondent- Generating a lot of interest, have been contacted by two companies
  - “We can haul a lot of material but we need it to go somewhere.”
  
- Respondent- “The asbestos analyzing needs to start at the beginning of the process with the carpet retailer. Without this process there are numerous parts for contact with asbestos that is really dangerous. Another barrier is that our materials are shipped to Georgia. We have a tipping fee at one place and then another hauling fee to Georgia. This process is currently a loss, but we want to try it and help pioneer this process.”
  
- Respondent- “Carpet should be removed before the house is torn down to alleviate woods chips and splinters.”
  
- Respondent- “The Engineering Technology program is interested in serving as a resource to companies who are interested in having formulation, recycling, or processing research performed. We are currently not interested in developing our own products/processes.”