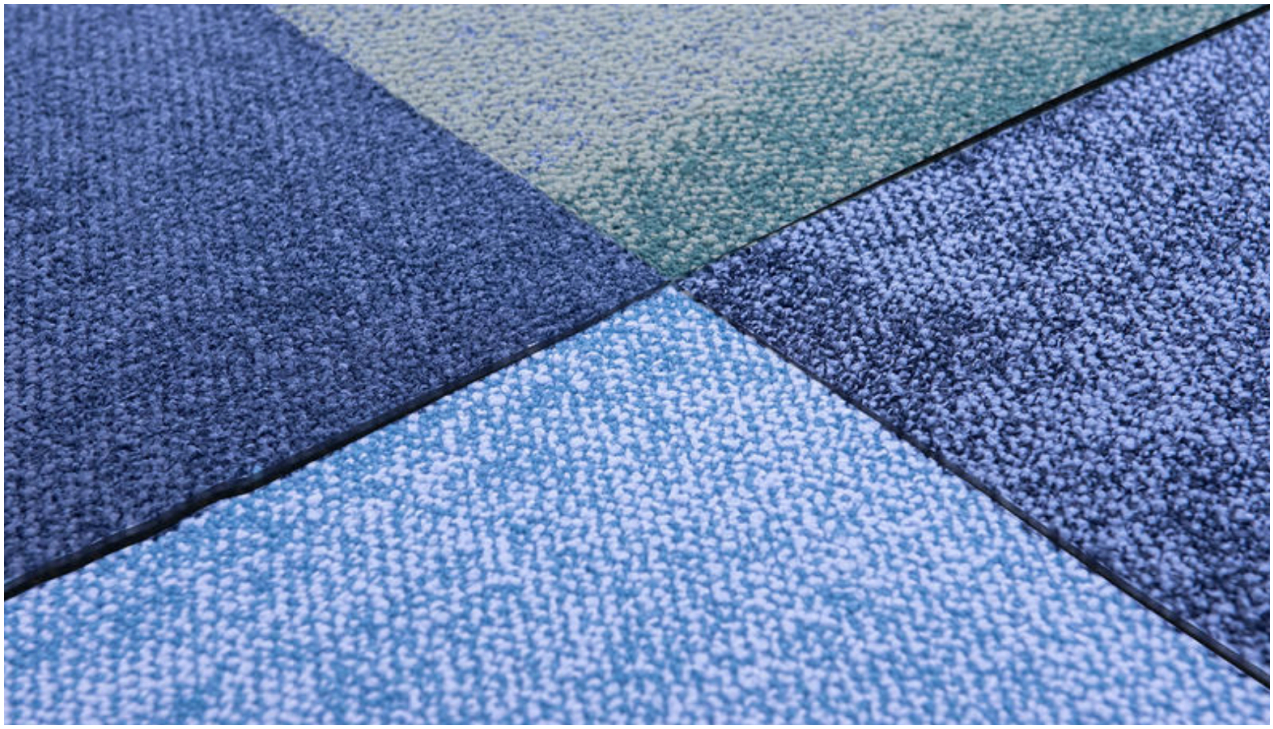

Post-Consumer Carpet: Barriers and Opportunities for Reuse

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Image description: Four carpet tiles in differing shades of blue.
Source: https://www.birchcarpets.co.uk/blog/carpet-tiles-advantages-disadvantages

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Methodology

This post-consumer carpet reuse study was conducted in April and May 2021 by Abbe & Associates LLC for Carpet America Recovery Effort, Inc. (CARE).

With guidance from CARE, we began our work by conducting research to identify the potential opportunities for recovering post-consumer carpet for reuse and distributing reusable post-consumer carpet to potential customers.

We prepared a master list of contacts which included:

- Event Spaces/Convention Centers
- Event Carpet Rental Companies
- General Service Contractors
- Exhibitor Appointed Contractors
- Cleaning Companies
- Sustainable Event Planners
- Construction Contractors
- Reuse Outlets
- Textile Companies
- Educational Organizations
- Carpet Retailers
- Collector/Sorter Entrepreneurs

Over a six-week period, we conducted 40 stakeholder interviews to identify the opportunities and barriers for expanding reuse of post-consumer carpet in California. We met weekly with CARE staff to discuss our observations and to obtain guidance for further investigation. This report documents our findings and recommendations.

Findings

We found that there are robust existing channels for reuse of post-consumer carpet. Gently used, like-new carpet tile and broadloom carpet is donated and resold in California. CARE's Collector/Sorters quantify and report carpet reuse. However, much of the activity conducted by reuse outlets, online exchanges, and construction contractors is not documented or quantified.

CARE's subsidies for reuse provides a sufficient motivator for Collector/Sorters to prioritize reuse over recycling.

More marketing and training is needed throughout the carpet recovery ecosystem (building owners, installers, commercial contractors, reuse outlets).

Barriers, Opportunities, and Best Practices

Temporary Events and Event Spaces

Events offer an opportunity for carpet reuse, both through temporary trade show exhibits and red carpet events.

Convention Centers

We contacted six convention center facilities located throughout the state. The venues are not responsible for supplying the carpet for temporary events, but maintain their own permanent carpet in hallways and ballrooms. The carpet has a lifespan of 10 to 20 years, is frequently used past its lifespan, and is generally not suitable for reuse when replaced, due to wear and cost of deinstallation with reuse as destination. There is some reuse potential of temporary exhibitor broadloom carpet through collection of abandoned or discarded carpet, depending on the condition.

General Service Contractors

Every trade show has its own proprietary Show Management team, who contracts the use agreement with the convention center facility in accordance with the venue's guidelines and union labor agreements. Each venue may have exclusive contractors for specific functions. Show Management is responsible for hiring a General Service Contractor, who in turn may contract with a facilities Cleaning Service or other vendors for services, as permitted by the facility and its exclusive vendor agreements. Event carpet can be the property of a General Service Contractor, owned by a carpet supplier/manufacturer, or owned by an exhibitor. A General Service Contractor is responsible for any carpet their company provides to exhibitors. Event carpeting is typically polypropylene broadloom and of lower quality than residential or commercial carpet.

We interviewed two international General Service Contractor companies and two smaller, regional companies based in Northern California. The two regional General Service Contractors we interviewed maintain their own inventories of different weights of polypropylene carpet, and reuse their carpet as many times as possible until quality decreases noticeably. Carpet could then be sent for recycling or disposal, or donated if quality is acceptable. Neither of the regional General Service Contractors interviewed recycled their retired inventory; one contractor attempted to donate when possible but lacked consistent recipients.

The two international General Service Contractor companies we surveyed transitioned to a new model in 2018/2019. All carpet used in booths or aisles is the property of an exclusive vertically integrated supplier/manufacturer. Carpet is returned to this supplier, who maintains depots in Atlanta, Georgia and Las Vegas, Nevada. The supplier accepts only the carpet they supply for reuse and recycling. Carpet is cleaned, serviced, and held in inventory by the supplier, and is reportedly reused 5 to 8 times. Lifespan is determined by color, type of carpeting (thicker "premium" grades of polypropylene event carpet are available for exhibitor booths), and type of event. The carpet is reportedly

either donated to organizations located around the depots or recycled, according to representatives from both companies.

General Service Contractors are responsible for maintaining venue cleanliness during an event and restoring venue at move-out. A General Service Contractor hires an independent Cleaning Service contractor, if the venue has no exclusively contracted Cleaning Service. The Cleaning Service contractor vacuums aisle carpet and exhibitor booth carpet (if requested) during the event. At move-out, the Cleaning Service contractor collects any exhibitor-abandoned debris, including carpet. Cleaning Service contractors handle all debris according to venue protocol for disposal and source separation (if any). One national Cleaning Service contractor was interviewed, who indicated that carpet comprised a small fraction of discarded debris.

Exhibitor Appointed Contractors

Exhibitor Appointed Contractors can be hired by individual exhibitors, and are not under the direction or supervision of the General Service Contractors, nor are General Service Contractors responsible for these companies or their goods. These companies offer services including complete booth design, fabrication and installation. They may sell or rent broadloom carpet to exhibitors, depending on their own business model. Some Exhibitor Appointed Contractors may maintain inventory of carpet (some of these companies can also function as General Service Contractors). One contractor may reuse carpet multiple times, while another contractor may not operate with a business model that retains carpet inventory for multiple-reuse opportunities. An Exhibitor Appointed Contractor may be responsible for building and removing a booth depending on the individual agreement with the exhibitor. If an Exhibitor Appointed Contractor deinstalls carpet that their client-exhibitor may own, but no longer wants, and the contractor does not operate a rental inventory business model, the carpet's destination is unknown. Often landfilling is the cheapest and easiest form of disposal following an event. The Exhibitor Appointed Contractor or their client is responsible for carpet removal, depending on their agreement; there is anecdotal evidence that either party in this situation may choose to abandon carpet in a venue as a cost savings, although this would typically incur a penalty for the exhibitor, issued by the venue. Carpet would then be processed as debris by the Cleaning Service contractor, as per venue disposal stream protocol.

Red Carpet Events

Red Carpet Events include film and theatre openings and festivals, awards ceremonies, weddings and other life occasions, and company parties. Carpet may be in use for one to three days. Carpet used for red carpet events is typically polypropylene broadloom and is rented for the event, and remains property of the Red Carpet Event company.

Three Red Carpet Event businesses were interviewed, all based in Los Angeles. Each company reuses the carpet as many times as possible; carpet is cleaned at the warehouse, and edges may be bound when necessary, as carpet edges may degrade during the cleaning process. Event carpet is lower quality than permanent carpet. Lifespan for reuse is determined by color and wear, as lighter colors are not easy to

clean and reuse. One company uses white carpet one time only. When carpet is no longer suitable for inventory, it is recycled or landfilled, depending on the company. Only one company reported recycling its retired inventory but provided no detail (this company in expressed great interest in donation opportunities.)

Barriers to Reuse: A common barrier is finding organizations that consistently and readily accept usable carpeting, as speed is of utmost importance in managing temporary events. Reuse infrastructure needs to be expanded, so that carpet can be moved out of the facility or from an event quickly. The quality of carpet may also be a barrier to reuse, as it is typically not of commercial or residential quality. Cost of labor to assess reuse quality onsite at venues is prohibitive (union rate), but this scenario could be of interest to the smaller companies that own their inventory which they may be ready to retire after multiple uses.

Opportunities for Cultivating Reuse: The two largest General Service Contractors strongly suggest that Exhibitor Appointed Contractors present best opportunities for recovering any potentially reusable carpet. Both companies had established donation partners in Mexico when they were owners of the carpet inventory (prior to transition to manufacturer-as-supplier model). As Exhibitor Appointed Contractors use their own labor or union labor, they may be more inclined to dispose of carpet rather than expend money on storing it. They may lack space to warehouse any inventory. As the customer has already paid to purchase carpet, there is no incentive for Exhibitor Appointed Contractor to retain it unless they have a carpet inventory business model. There is possible reuse potential of exhibitor temporary carpeting, but this sector would need to be further researched to assess actual generation. There are numerous companies in this category, who are contracted directly by exhibitors themselves, whereas General Service Contractors are contracted by Show Management and follow any established guidelines and protocols in their agreements. Currently, beyond the aforementioned General Service Contractors' and Red Carpet Companies' statements of multiple reuse practices, we assess substantial generation of additional reusable-quality carpet from this sector to be fairly low.

Reuse Outlets

Reuse stores, including reusable building supply stores and retailers, are a primary outlet for redistributing clean, reusable post-consumer carpet. CARE Collector/Sorters are motivated to provide high-quality post-consumer carpet to reuse stores based on:

- CARE reuse subsidy (35 cents per pound, as of 4/1/21)
- Reduced cost or no cost for acceptance
- Potential tax deductions for donations (for non-profit reuse stores)

Reuse Stores

We contacted eight building material reuse stores. Most of the reuse stores we contacted do not accept post-consumer carpet or carpet tile from the general public or will only do so only very occasionally. While most reuse outlets stated they do not accept any used carpet on their websites, at times they accepted carpet that was in "like new" condition. A donor had to provide pictures and documentation of the quality of the

carpet. The majority of the reuse stores that we contacted cater to residential customers. Thus, commercial carpet tile is of limited interest. To expand markets for carpet tile, reuse stores could partner with similar reuse businesses, such as used office furniture stores. Other opportunities include: marketing carpet tiles to small businesses and institutions (such as schools and faith organizations), commercial contractors, flooring installers, and advertising the use of carpet tile for bonus utility rooms, such as garages and home offices.

There are likely to be more opportunities to establish and expand reuse outlets that specifically market to commercial contractors. Three stores that we contacted have formed strong relationships with suppliers (Collector/Sorters or construction contractors) and will accept post-consumer carpet from these sources because they can trust that it will be of high quality.

- Stardust Building Supply is a non-profit organization which operates two reuse centers in Glendale and Mesa, Arizona. Stardust has full-time deconstruction crews operating five days a week, salvaging building materials for reuse from residential and commercial renovations. Stardust receives donated, high quality carpet tile from Collector/Sorters in Southern California.

- Habitat for Humanity ReStores are independently owned reuse stores operated by local Habitat for Humanity organizations that accept donations and sell home improvement items to the public. Some, but not all, ReStores we contacted have formed relationships with Collector/Sorters and construction contractors and are able to receive, store and market carpet tile for reuse.

- The ReUse People is a non-profit deconstruction contractor that operates warehouse outlets for salvaged building materials throughout California and in eight other states. The ReUse People receives donated, high quality carpet tile from commercial contractors in California.

Barriers to Reuse: The major barriers to reuse are size and storage. Broadloom carpet is bulky and heavy. These 12 foot carpet rolls are massive and require special forklift tools, which are expensive and large in size, and which may require special storage. Most stores do not have the framing to store carpet like in a warehouse or a carpet retailer. Donated carpet tile arrives in pallets, and some stores do not have the equipment to physically move them. There are also safety concerns for customers and a liability for the store if heavy carpet is unrolled or moved. Carpet cannot be kept outside, due to risk of damage from precipitation.

Most stores do not have the equipment or infrastructure to protect carpet or carpet tile, and thus, they eventually may have to go to the landfill. Many of the stores we spoke with were not familiar with CARE, nor carpet recycling laws in the state, nor CARE drop off sites at various landfills. This provides an opportunity for CARE to connect reuse stores to Collector/Sorters, and also to conduct outreach to reuse stores on a regular

basis, as it is likely that staff turnover is faster than at carpet retailers. Some reuse stores have shied away from accepting large donations of carpet for some of the following reasons: lack of infrastructure, space, knowledge about availability of end markets for high quality carpet reuse, and availability of high-end carpet for reuse.

Opportunities for Cultivating Reuse:
CARE's pilot online promotions for carpet tile for specific stores, such as running Google ads, has been beneficial and they have seen a direct increase in sales (by 11%) compared to previous years in spite of the pandemic.

CARE could provide additional support to reuse stores through:

- Direct assistance for infrastructure and tools (including racks and forklifts)
- Expanding the grant program or other incentives for reuse stores
- Education and outreach to building professionals, such as contractors, interior designers, and demolition companies and facilitating the relationships between the contractors and the stores
- Providing subsidized or no cost cleaning services, so the carpet is disinfected and clean. Local and smaller carpet cleaners may be more agile and benefit more financially than larger companies.

Material Exchanges

Post-consumer carpet and surplus new carpet can be listed through on-line exchanges.

- Craigslist.org is a classified advertisements website with sections including "items wanted" and "items for sale." In May 2021, there were over 300 listings for "carpet" in the San Francisco Bay Area. However, many of these listings are actually for rugs or vehicle floor mats.

- OfferUp.com was founded as a competitor to Craigslist and offers mobile-friendly apps for Apple, Android and web devices. OfferUp is designed as a "Customer to Customer" or C2C market experience where one customer purchases goods from another customer (rather than from a business). As with Craigslist, in May 2021, there were a similar number and type of carpet products listed including broadloom carpet and carpet tile. NextDoor.com and Facebook Marketplace largely function in the same way.

- Atticstock.com is a website where flooring dealers can buy, sell, and trade excess materials directly with other dealers and with the general public. In May 2021, there were three entries for surplus carpet listed in California.

- Repurposedmaterialsinc.com is a nationwide online materials exchange and also operates reuse yards in Chicago, Denver, Dallas-Fort Worth, and Williston, South Carolina. In May 2021, there were three entries for repurposed carpet.

Barriers to Reuse: Online material exchanges serve a limited role in carpet reuse. While customer-to-customer transactions will continue to occur, these exchanges have not been major outlets for Collector/Sorters or reuse stores. Some Collector/Sorters have used online exchanges for finding buyers or donation outlets. Some reuse stores have used online exchanges to advertise the availability of other building suppliers or reusable materials. However, the exchanges are limited because the buyers are not able to see the quality and condition of the carpet, the geographic location of the carpet may not be desirable, and the customer may not have the ability to transport the carpet. Commercial contractors may not think to find supplies at online exchanges, preferring building material stores and suppliers. It is also time consuming for reuse stores to list materials for sale and respond to online inquiries. Most stores we spoke with do not post all of their materials online. It's a "first come, first served" business, although one store provided the option to purchase online and then pick up at the store. Since they sell at a fraction of the cost to keep prices low, they cannot ship goods. Some stores posted the more expensive items online.

Opportunities for Cultivating Reuse: Collector/Sorters need to move materials quickly and several prefer direct donation to reuse stores (rather than sales). It is possible for reuse stores to advertise the ongoing availability of carpet and carpet tile through online material exchanges without having to respond about individual pieces. CARE could also dedicate marketing assistance to reuse stores through promotions in online exchanges and advertising the availability of reusable carpet to contractors. More business-to-business advertising could be done to promote highest and best use of materials.

Commercial Contractors

We interviewed four deconstruction contractors who specialize in dismantling buildings or building interiors to recover building materials (such as fixtures, framing, and flooring) for reuse and recycling. We learned about the challenges and best practices for recovering carpet and carpet tile for reuse. Deconstruction requires training and takes more time that traditional commercial contracting or demolition.

The majority of traditional commercial contractors or demolition companies are not trained in deconstruction and do not separate materials or deinstall materials with an eye toward reuse or recycling. For example, in an interior remodel, a deconstruction contractor would take the carpet out first for reuse or recycling and then scrape the floor prior to taking down the walls. A traditional demolition company would take the carpet out last (to avoid having to scrape the floor). But once the carpet is contaminated with dust and drywall debris, it is no longer reusable or recyclable. This is why deconstruction contractors are more likely to come away with reusable or recyclable carpet as opposed to traditional commercial contractors or demolition companies who do not focus on reuse or recycling.

Each of the deconstruction contractors we spoke with has outlets for high quality reusable carpet tile at their own warehouses or through reuse stores. Broadloom carpet is more of a challenge because of its bulk. Carpet tile is palletized onsite at the construction sites and transported to reuse outlets (if the carpet tile is of high quality) or

Collector/Sorters for recycling (if the carpet shows wear and if it is a type of carpet tile that is acceptable for recycling). If the project is small or if the carpet tile is not reusable or recyclable, the deconstruction company may dispose of the carpet in roll-off debris boxes provided by the local hauler or self-haul the carpet to a landfill or transfer station.

Some deconstruction companies operate their own warehouses where reusable building materials, including carpet and carpet tile, are sold or made available for donation.

Barriers to Reuse: We spoke with contractors that specialize in deconstruction. Deconstruction requires commercial contractors to take more time and care when demolishing a building or remodeling an interior space. Traditional commercial contractors and deinstallers may not be willing to take the time to remove carpet and carpet tile for reuse or recycling or provide the labor needed to palletize the carpet tile or prepare the carpet for reuse or recycling.

Opportunities for Cultivating Reuse: Traditional commercial contractors and deinstallers need more information about the availability and economics of carpet reuse and recycling. They need to be trained on appropriate techniques for preparing the carpet for reuse and recycling and the availability of regional Collector/Sorters and reuse outlets.

Collector/Sorter Entrepreneurs

We spoke with six Collector/Sorter Entrepreneurs involved in different aspects of carpet recovery. Their perspective on carpet and carpet tile reuse varied based on where they are in the carpet recovery system, as outlined below.

Processors: These companies provide processing of post-consumer carpet, producing raw materials (such as nylon, polypropylene and polyester fiber) that can be used in manufacturing. Some processors also do collection. In our interviews, we heard that they are looking for more feedstock for recycling. While they may have some outlets for reuse, working to find reuse outlets, and negotiate logistics and pricing, is time consuming. They would rather focus on recycling.

Collector/Sorters: These companies find sources of post-consumer carpet, collect it from the source (or receive it from the source at a collection facility) and prepare truckload quantities of baled or palletized carpet for shipping to a Processor or manufacturer for recycling or to a reuse outlet for reuse. The Collector/Sorters that we interviewed had robust outlets for reuse (primarily donation rather than sales) and were interested in expanding opportunities in this area. They are motivated by following the hierarchy (reuse is better than recycling) and the higher CARE subsidy for reuse.

Brokers: These companies are primarily engaged in connecting buyers and sellers (or donors and recipients). In California, some high quality post-consumer carpet is sold to installation companies and retailers. Brokers are motivated to move post-consumer carpet to reuse outlets because they can handle smaller quantities (manufacturers

require truckload quantities of their own brands) and by the higher CARE subsidy for reuse.

We also interviewed a broker in Georgia that specializes in carpet tile and markets post-consumer carpet tile across the country (see below).

Biscuit's Bargains

Biscuit's Bargains is a division of Carpet Corporation of America, Inc. They are family owned and have been operating in Rome, Georgia since 1972. They sell new and pre-owned carpet tiles. Their warehouse is 120,000 square feet that was built in 1930.

Carpet tile reuse is part of their business model. Most commercial spaces, usually offices, that use carpet tile have a contract for a specific length of time. Often, at the date of the contract, all the carpet tiles are pulled and replaced.

Many carpet manufacturers take back carpet tile, but if it has a cushion backing, it can't be recycled, so they call Biscuit. In turn, Biscuit gets a trailer load and pays for shipping of the tiles via FedEx, US Postal Service, whichever has the best rate. If the load doesn't have enough similar tiles to sell, Biscuit will sort the usable tiles by color, and reduce the price for the end-user. They'll review and cull out the ones that aren't usable. They sell tiles at discounted prices for low- income housing or other charitable contributions.

They ship all over the United States (95% of shipments are domestic) and beyond, to Africa, Singapore, Guatemala, Hawaii, and the United Arab Emirates.

They aren't seeing challenges in receiving/storing/sorting carpet that is reuse worthy, selling the tiles, and are not offered more than they can take. Biscuit is a member of CARE and receives a subsidy for broadloom and carpet tile, for reuse or recycling.
www.carpet-usa.com

Barriers to Reuse: Timing and space are potential barriers. Some carpet needs special handling. Broadloom carpet needs to be cut into room-sized sections and can be no heavier than what can be handled by two people without a forklift. Relationships with reuse outlets need to be carefully managed. The Collector/Sorters we spoke to only provide the highest quality carpet or carpet tile to reuse outlets. Once trust is there and the reuse outlet has a good experience with selling the carpet, word spreads quickly and they are able to successfully market the carpet. More reuse channels need to be cultivated.

Opportunities for Cultivating Reuse: The Collector/Sorters we interviewed are entrepreneurs that had been in the business for over 20 years. They were bullish on carpet recycling and carpet reuse and had many ideas that could help to increase reuse of post-consumer carpet.

- **Investment** – One Collector/Sorter is looking at doing on-site packaging of carpet tile. Sources would deliver (or they would pick up) loose tiles that would then be sorted and palletized for reuse or recycling. More grants and other incentives could be provided to develop the infrastructure and pathways for handling post-consumer carpet.

- **Marketing** – More people involved in installing and deinstalling carpet need to know about CARE and the carpet recovery options. More potential customers need to know about the availability of post-consumer carpet for reuse.

- **Training** – More people involved in the carpet recovery eco-system need to be trained in how to prepare post-consumer carpet for reuse and the outlets for reuse and recycling.

- **Regulation** – Cities could specify carpet reuse and recycling in their construction and demolition ordinances. Building owners can require carpet recycling and reuse in deconstruction or remodeling contracts (and some now include this as part of their sustainability goals). The state legislature could ban carpet from landfills (unless it has gone through a certified Processor or Collector/Sorter who would be able to determine if it was reusable or recyclable). The state legislature could also require that all carpet sold in the state be designed for reuse or recycling.

There is a delicate balance between Collector/Sorters and Processors, as Processors need feedstock for recycling. There is potential competition between brokers and Collector/Sorters (and between reuse stores that overlap geographically with each other). CARE's contracted Collector/Sorters provide data to CARE on carpet recycling and reuse. Commercial contractors ship loads of post-consumer carpet to manufacturers or deliver it to reuse outlets outside of CARE's reporting process. CARE must carefully balance the business needs of the various participants in the carpet recovery system to encourage the free flow of carpet to recycling and reuse in order to maximize diversion of carpet from landfills.

Supporting Collector/Sorters through higher reuse subsidies has motivated them to find donation channels for post-consumer carpet. However, more regulatory tools, training and awareness is needed throughout the carpet installation and deinstallation chain to maximize diversion.

Other Carpet Recovery Stakeholders

In addition to venues, reuse outlets, commercial contractors, and Collector/Sorters, we contacted other carpet recovery stakeholders.

Retailers

Retailers may have their own installation crews or may subcontract for installation. When retailers subcontract, it is the responsibility of the installer to dispose or find outlets for the deinstalled carpet. We understand that many large volume flooring

contractors (e.g., for big box retailers and multi-family contractors) have private on-site recycling pick-up services. However, some carpet generated by installers goes to transfer stations or landfills (where there may or may not be recycling opportunities). We spoke with two retailers that are responsible for the deinstallation of carpet. One has reuse outlets for cement curing and industrial reuse. The other provides used carpet as padding for shipping equipment and at auto dismantlers (such as Pick N Pull). The retailers that we spoke with did not have outlets for reusing carpet as flooring.

Municipal Staff
There is a lot of interest among municipalities to reduce construction and demolition debris. As communities increase residential and commercial diversion rates, construction and demolition debris disposal becomes a bigger portion of what is disposed at landfills. The cities of Portland and Palo Alto have adopted new deconstruction ordinances that require buildings that are slated for demolition to be deconstructed instead. Palo Alto's ordinance also requires source-separation and reuse or recycling of building materials, including carpet. The City of San Francisco is initiating a pilot project to reduce the generation of surplus construction materials. In new construction or remodels, builders will often order 10-15 percent surplus building material, including carpet. Surplus carpet may be disposed on the job site or reserved as "attic stock" and stored onsite by the building manager. The reserved carpet can then be used to repair carpet in the building, but becomes surplus over time and needs to be disposed. Some building managers have found outlets for reuse and recycling of attic stock through online channels or through Collector/Sorters. San Francisco staff would like to encourage or require architects and builders to reduce the amount of surplus building materials that they order. They would also like to encourage or require builders to find reuse and recycling opportunities for the surplus instead of job site disposal.

Transfer Stations
Transfer stations are busy, constrained spaces for reuse and recycling. CARE has contracted with numerous transfer stations and landfills to host drop off sites for carpet recycling. These sites are typically used by self-haulers, including flooring installation companies and contractors. According to our interviews, it would be very difficult and confusing to host both recycling and reuse drop-off sites at transfer stations, as the customers would need to determine whether the carpet was reusable or recyclable or the transfer station would need to dedicated staff to this effort.

Barriers to Reuse: Carpet retailers and their subcontractors who are working mostly with residential carpet may not have sufficient high-quality carpet that is suitable for reuse. Transfer stations have space and staffing limitations that preclude drop-off sites for both recycling and reuse.

Opportunities for Cultivating Reuse: CARE could support policies at the state and local level to ensure that no carpet is directly disposed and that high-quality deinstalled carpet is directed for reuse as flooring. CARE can provide outreach and education, model ordinance language, and support connections between retailers, installers and Collector/Sorters.

Potential Role of CARE to Increase Reuse

CARE has provided incentive payments to Collectors/Processors to prioritize reuse over recycling. This has been a sufficient motivator to direct high-quality post-consumer carpet tile and broadloom carpet to non-profit reuse outlets and to some retailers and installers for resale.

Temporary Events and Event Spaces
Our research determined that temporary carpet used at venues and red carpet events is typically reused until it becomes too worn or soiled for reuse. New models for renting carpet from manufacturers for cleaning and reuse have become a standard practice for the national General Service Contractors. Exhibitor Appointed Contractors that build and either rent or sell exhibits to exhibitors may provide the best opportunity for expanding reuse. According to our interview with a national Cleaning Service contractor, very little carpet is left behind or abandoned by the exhibitors. The Collector/Sorters we spoke with have developed relationships with all of the five major convention centers in the state (Los Angeles, Oakland, San Diego, San Francisco, and San Jose) and most of this abandoned carpet is recycled. CARE can provide model contract language to smaller venues to require that their haulers direct carpet to reuse and recycling, as is done at some convention centers. CARE can provide outreach and education to Red Carpet Event businesses about outlets for reuse and recycling.

Reuse Outlets
CARE and its contracted Collector/Sorters have created strong partnerships with some reuse outlets. More work can be done to expand the number of reuse outlets that can handle post-consumer carpet. CARE can provide infrastructure and marketing support to reuse outlets. This could include grants for forklifts and racks for loading and storing carpet. CARE can also help reuse outlets to advertise the availability of high-quality post-consumer carpet to commercial contractors and through online material exchanges.

Commercial Contractors
Deconstruction is an emerging opportunity in California. Several deconstruction contractors have been in operation for many years. But more effort could be undertaken to expand deconstruction prior demolition or tear out with traditional commercial contractors. CARE can provide outreach and education to commercial contractors and installers about the proper procedures for deinstalling carpet and carpet tile for reuse and recycling (e.g., remove carpet first to preserve quality). CARE can also work with building owners and developers to request this approach (as is currently done with some companies that have sustainability directives). CARE can support deconstruction contractors in expanding their outlets for reuse.

Collector/Sorters
CARE contracts with Collector/Sorters to expand opportunities for reuse and recycling across California. To a certain extent, there may be natural territorial boundaries that limit the number and activity of Collector/Sorters. CARE must ensure that there is sufficient geographic coverage, but also enough capacity among the Collector/Sorters for the amount of reusable and recyclable carpet in the territory. CARE can fill in gaps were needed by supporting Collector/Sorters to service areas of need. For example, if a Processor in a geographic area is focused on recycling, there may be a need to support more Collector/Sorters to address reuse. There may also be a role for support of more reuse brokers who can match buyers to sellers (or donors to recipients). However, care must be taken to avoid undermining existing paths for recycling. Oftentimes, what is good for promoting reuse (awareness, education, marketing, policy support) will also support recycling.

Other Carpet Recovery Stakeholders
CARE consults with municipalities to promote reuse and recycling of carpet. CARE can also support municipalities in developing contract language for service providers, commercial contractors, venues, and others to enhance deconstruction and reuse and recycling of carpet. CARE can also provide municipalities with ordinance language for deconstruction and source-separation of building materials, including carpet (based on models from Palo Alto and Portland).

Expansion of drop-off sites at transfer stations for reuse in addition to recycling may be prohibitive (due to space and staffing constraints). However, CARE can explore expansion of drop-off sites at other locations, including retailers (where installation staff can be trained about what is reusable or recyclable), venues (with sufficient loading dock capacity), at Collector/Sorter facilities, and at contractor warehouses (for storage and redistribution of surplus carpet or attic stock).

Next Steps
While this study was limited in scope and duration, we identified a number of next steps that CARE can undertake to further enhance reuse of post-consumer carpet in California.

1. Join the Bay Area (& Beyond) Deconstruction Workgroup hosted by U.S. EPA Region 9. The workgroup was formed in late 2017 and started by learning about Portland's Mandatory Deconstruction Ordinance. It holds quarterly meetings to learn from the participants about policies, results, barriers in deconstruction and to share opportunities for collaboration and ideas. Workgroup members include regional, national and international participants. Website with resources, contacts and meeting notes: https://www.stopwaste.org/DeconstructionWorkgroup

2. Expand current outreach and education efforts (focused on awareness and opportunities for carpet recycling) to include awareness and opportunities for carpet reuse. Inform retailers and installers of the best practices for preparing

post-consumer carpet for reuse and working with a Collector/Sorter to direct high-quality post-consumer carpet to reuse outlets.

3. Continue to engage and recruit reuse outlets to expand their market and capacity for carpet reuse. Expand the grant program for reuse and provide technical assistance for infrastructure, machinery (forklifts and pallet jacks), public education, and marketing. Consider entering into Memoranda of Understanding with reuse outlets that receive grants or assistance in order to obtain information on annual carpet reuse statistics.

4. Conduct outreach to large generators of post-consumer carpet, including building owners and managers, commercial contractors, and venues to provide direct assistance and contract language for specifying carpet reuse and recycling.

5. Seek out opportunities for presentations to sustainability directors of commercial contractors (such as NOVO construction, GCI construction, Dome, Rossi Builders) and large institutions (such as Google, Apple, Chase Bank) to ensure that they are prioritizing strategies for reuse and recycling of post-consumer carpet and attic stock. Invite sustainability directors from large institutions and commercial contractors to a roundtable to discuss their needs and share their successes. Focus on their priorities, such as potential cost savings and the carbon reduction benefits of carpet reuse and recycling.

6. Present strategies for carpet reuse and recycling to municipal staff at conventions and workshops, such as California Resource Recovery Association (www.crra.com) and Urban Sustainability Directors Network (www.usdn.org). Offer to sponsor workshops and webinars specifically on carpet reuse and recycling, feature innovators among Collector/Sorters, deconstruction contractors and reuse stores. Emphasize the importance of establishing relationships and regional markets. Provide information on the carbon reduction benefits of carpet reuse and recycling.

7. Sponsor annual carpet reuse workshops through CalRecycle identifying best practices for carpet deinstallation, contract language for venues and building owners, ordinance language for municipalities. Focus on policies that venues, building owners and municipalities can undertake to assure highest and best use in carpet reuse and recycling. Feature innovators among building owners and municipalities.

8. Consider developing a pilot partnership with professional carpet cleaning services (match services to retailers or reuse outlets) to facilitate and increase confidence for purchasers of used carpet/carpet tile.