



## Trash to Treasure: Turning Waste into Jobs



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**Emily Mitchell:** Welcome to the Federal Reserve Bank of Atlanta's Economic Development podcast series. I'm Emily Mitchell with the Federal Reserve Bank of Atlanta.

Job creation is a critical issue today, particularly since many sectors have suffered job losses in the recent recession. In November 2011, the Institute for Research on Labor and Employment at the University of California at Berkeley, and supported by the Annie E. Casey Foundation, released a group of papers highlighting proposals for policies and programs to spur job creation. The papers represent the winners of their "Big Ideas for Job Creation" project—a call to academics and economic development practitioners to design jobs programs for cities and states that would lead to net new job creation in one to three years. In this podcast series we will feature five of those ideas.

Today I'm speaking with Nancey Green Leigh, a professor of city and regional planning at the Georgia Institute of Technology since 1994. Nancey's idea, entitled "Turning Waste into Jobs," was one of the 13 "big ideas" selected.

Nancey, thank you for speaking with us today.



**Nancey Green Leigh:** Thanks for the opportunity.

**Mitchell:** Tell us about your "big idea," and what issue you are working to address with it?

**Leigh:** My idea focuses on how we can create jobs from waste diversion. Rather than throwing away the waste that we create into landfills, we can take this material and treat it as a locally produced resource used to create new, local jobs. My research examines reusing materials, and recycling and remanufacturing products from these materials in various industries, and I call these the R3 industries—the R3 standing for *reuse*, *recycling*, and *remanufacture*.

Recycling activity can create over 10 times more jobs than disposal in landfills, and in most states recycling workers receive higher wages than landfill workers. The number of jobs generated by the R3 industry has been increasing, but with the right policy environment, many more could be created. More jobs are generated by recycling material than disposing it into the landfills because once material has been collected, hauled, and placed into the landfill its value becomes zero. But, in contrast, if we reuse, recycle, and remanufacture that material, we provide a range of opportunities to create value and jobs. These opportunities come from further material handling, sorting, processing, manufacture, distribution, research and development, marketing, sales, and related administrative and support activities. So, the jobs are not only in lower-skill industrial occupations, they can be in much higher-level occupations, and they can also be in activities like industrial and furniture design and architecture.

So, right now, with waste, we create only one-tenth of one job for every 1,000 tons of waste that we throw away and put into landfills. If we process recycled materials we create one to two jobs, and if we manufacture using recycled materials we create four to 10 jobs for every 1,000 tons of waste.

**Mitchell:** Nancey, how many jobs do you believe this idea could create, and what would be the cost?

**Leigh:** There are estimates that if the current landfill diversion rate of 33 percent from municipal solid waste and construction and demolition debris were increased to 75 percent by the year 2030, we could create 1.5 million new jobs.

Our efforts to nail down the costs of creating R3 jobs are hampered by a lack of robust data. Our best estimates that are based on case studies are that costs would range from between \$5,000 and \$116,000 for jobs created, and that for every \$1 billion of investments in the R3 industries, over 16,500 jobs would be created. Jobs can be created in the private sector, the public sector, and nonprofit businesses, and it costs significantly less to create jobs in the R3 industry in a nonprofit business.

**Mitchell:** What are the main barriers to waste diversion programs, and how can they be overcome?

**Leigh:** When there is a low cost of disposing waste in landfills, or throwing away our trash, which is the case for a good part of the U.S. these days, and there's an absence of waste diversion policies, then firms that are engaged in the R3 industry (in reuse, recycling, and remanufacturing) have a harder time competing in the market.

Also, the lack of comprehensive publicly available data on the R3 industry makes it difficult to motivate state and local government policymakers to take advantage of this economic development potential. But cities with mandatory waste diversion goals, or "pay-as-you-throw" policies, have been shown to spur successful R3 job creation. The pay-as-you-throw policies are those that charge per bag of trash being thrown away and motivate consumers to decrease what they are throwing away and recycle.

There are three key ways to stimulate the R3 industry at this point in time and to overcome barriers to waste diversion programs.

The first is through legal mandates that can be adopted at the local level or the state level, and that require general waste diversion from landfills. Included among specific product-focused waste diversion policies can be those such as mandated electronics recycling, and this is the area where half the states have actually created legislation to require electronics recycling. So, we've made some of our greatest progress in the recycling area, although we have a long way to go. San Jose, California, just became the first city in the U.S. to ban disposal in landfills or export e-waste so that it will create businesses and jobs from the requirement to process the e-waste responsibly. So, that's a major move forward at the local level. Other specific materials that have been banned from landfills are focused on construction and demolition waste and carpet waste.

Second, the industry can voluntarily choose to engage in R3 activity because it wishes to be more sustainable, or wishes to avoid regulation, or it sees that there is a potential for profits. The Carpet America Recovery Effort, which goes by the acronym CARE, by the major U.S. carpet manufacturers was driven, in part, by sustainability objectives, and, in part, by a desire to avoid regulation. The growth of the remanufactured medical devices industry is an example of a very profitable market base development that occurred on its own because of the profits to be made.

The third way that the R3 industry will grow is by increasing market demand for the recovery of valuable and/or rare materials, such as certain metals and chemicals. These are materials that are increasingly expensive to mine from the earth, for example, or to produce. And, it's becoming more cost-effective to recycle and extract these materials and reuse them. There are traditional economic development programs and incentives that can help to make this industry grow faster.

**Mitchell:** *Can you point to real-world applications of this idea? Where has this idea worked, and what are the results to date?*

**Leigh:** I want to focus here on a nonprofit example that has been quite successful. St. Vincent de Paul, which is a national charitable organization, has an operation in Eugene, Oregon, that began operating in the 1980s. And it has focused on reuse, recycling, and remanufacture of goods as a way to generate income from its secondhand stores, and it has used profits from that to provide other needed social services in its community.

From the 1980s it has grown to a place today where it employs over 300 local residents and diverted more than 19 million pounds of materials from landfills in the year 2010 alone. Its primary activities are used clothes retailing, mattress recycling, and craft glass manufacturing. But it also refurbishes appliances, sells them, and sends out technicians to homes to repair them, and guarantees their work, among other things that it is doing. In total, the employees of St. Vincent de Paul in Eugene are engaged in 10 major waste-to-profit activities, using a range of employees and job skills. The wages that they earn are above minimum wage and they come with benefits. The majority of the revenues that St. Vincent de Paul collects come from its retail sales of recycled and refurbished or remanufactured material; some of those sales are now even at the national level. And they use the profits that they receive to support affordable housing construction in the area to meet the needs of the low-income population in Eugene. So, it's really a robust nonprofit entity using R3 activities in order to support larger goals of providing improved quality of life and affordable housing for residents in Eugene.

**Mitchell:** *Nancey, thank you for joining us today.*

**Leigh:** Thank you for allowing me to talk with you today. I appreciate the opportunity to discuss this important idea for jobs and sustainable economic development that can come from growing the R3 industry.

**Mitchell:** *This concludes our podcast. We've been speaking with Nancey Green Leigh, professor of city and regional planning at Georgia Tech. For more podcasts on this topic and others, please visit the Atlanta Fed's website at [www.frbatlanta.org](http://www.frbatlanta.org). If you have comments or questions, please e-mail [podcast@frbatlanta.org](mailto:podcast@frbatlanta.org). Thanks for listening.*

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