



# eNewsLink



A NEWSLETTER TO EXPAND MARKETS FOR RECYCLED MATERIALS

Summer 2007

## Glass recycling: The solution is not so clear



Sorting glass at Fibres International recycling facility in Seattle.

Glass recycling is more complex than one might imagine. Programs around the state are striving to make recycling simple and easy for residents and businesses in order to maximize the success of recycling programs. But, glass is a significant issue for some material recovery facilities due to contamination of other material streams and wear-and-tear on equipment. And, since recyclable materials, including glass, are increasingly commingled when collected, increasing glass recycling continues to be a challenge, especially for high-value uses. Meanwhile, companies try to utilize as much recycled glass as the market provides.

Washington state, like other states across the country, seeks to balance efforts to improve glass recycling while maintaining the quality

of recycled products and trying to keep the process simple enough for residents and businesses.<sup>1</sup>

Each year, approximately 40,000 tons of container glass are generated in King County (outside Seattle), about 21,000 tons of which are being recycled.<sup>2</sup> According to the Container Recycling Institute, approximately 80 percent of glass containers in the U.S. were wasted in 2006, an increase of nearly 10 percent since 1996.<sup>3</sup>

Though glass recycling has its challenges, glass is second behind only paper as the largest incoming recyclable material by volume at four material recovery facilities serving the county, according to a 2006 King County study.<sup>4</sup> End markets for recycled glass include container glass, windows, tumbled glass, novelty products and construction materials such as road bedding, pipe bedding, backfill for drainage and other structural fill.<sup>5</sup>

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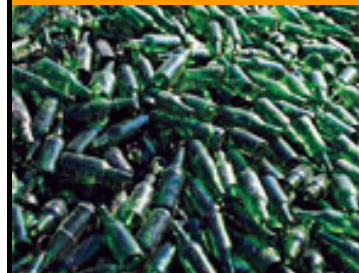
### Material highlights

*In 2007 [LinkUp](#) is focusing its recycling efforts on four priority materials: asphalt shingles, container glass, gypsum wallboard and urban wood.*

#### Shingles in Paving Stakeholder Meeting

The King County Solid Waste Division will host a [stakeholder meeting](#) to discuss developing the local market for asphalt shingles and the possibility of conducting a paving demonstration using that material as an additive. The meeting will be held on August 21, 1-4pm at the King Street Center in Seattle. For more information, contact Kris Beatty at 206-296-3740 or [kris.beatty@kingcounty.gov](mailto:kris.beatty@kingcounty.gov).

#### Zero container waste by 2020



In an effort to encourage better recycling of beverage containers, including glass, the

## Exploring incentives

Earlier this year, the [Washington State Beverage Container Recycling Initiative Funding Program](#) launched an effort to test the use of various incentives to increase the collection, recovery and recycling of used beverage containers. Initiative stakeholders include Washington Beverage Association, Washington Food Industries, Northwest Grocery Association, local and state governments, U.S. Environmental Protection Agency, Washington Citizens for Resource Conservation and the Northwest Product Stewardship Council. The testing program will continue through September 2008.

"Everyone understands the importance of container recycling," says Bill Smith, Senior Environmental Specialist with the City of Tacoma. "These containers are wasted on a very high level, are recyclable, and it's a tremendous loss of resources not to recycle them."

One of the initiative's objectives is to increase glass recycling in bars and restaurants, where 18 percent of beverages are consumed, according to the Glass Packaging Institute.<sup>6</sup> Other objectives include: increasing recycling at public gathering spaces and in communities with and without curbside programs; creating on-going systems to collect containers at large gathering spaces; and increasing the number of venues and locations providing on-going container recycling services.<sup>7</sup> The program will test the use of incentives to increase the recycling of containers made from various materials including glass. Six companies responded to the request for proposal to conduct, create and implement this testing.

"Glass will probably be the biggest beneficiary," says Smith, explaining that states that have offered incentive programs have higher levels of glass recycling.

## Challenges of glass recycling

Pierce County, Wash., has removed glass from its curbside pickup program because of glass being broken in the collection cart, though it's worth noting that glass breakage can also occur in collection trucks and at the processing facility. The broken glass shards mix with paper and other recyclables and have also damaged processing equipment. This lowers the value of recycled paper, increases processing costs and puts processing plant workers at risk of injury.<sup>8</sup> Instead, Pierce County residents now drop off glass at recycling sites throughout the county.

"For the last couple of years, glass recycling has gone down," said Steve Rounds, manager at Fibres International recycling facility in Seattle. "This is due in part to counties, such as Pierce County, taking glass out of recycling programs."

Since Pierce County stopped collecting glass curbside, glass collection in Pierce County (outside Tacoma) decreased from an average of 347 tons per month in 2004 to 215 in 2005.<sup>9</sup> In 2006 glass recycling rates increased again to an average of 246 tons per month.<sup>10</sup>

Container Recycling Institute (CRI) has implemented a ["Zero Beverage Container Waste" campaign](#). In 2006, more than 138 billion beverage bottles and cans were not recycled- up from 300 per capita just a 10 years ago.<sup>14</sup> Businesses and organizations can [partner](#) with CRI to help achieve this goal.

## Wood industry resource

Getting information on what's happening in the wood industry is being made easier by [Northwest Certified Wood Source](#). The newly created bulletin for green building, procurement and wood industry professionals will be published quarterly. The bulletin was created to report news related to the regional sustainable forest products industry. [The Forest Stewardship Council](#) also offers information on 100 percent recycled post-consumer wood.

## Asphalt recovery project

In June 2007, the [Town of Brentwood, NH](#) agreed to allocate \$500,000 toward the [Rockingham Economic Development Corporation/Asphalt Recovery Technologies project](#). Most of the money, \$480,000, will be used as start-up funds for Asphalt Recovery Technologies, a new business whose primary activity will be to recycle post-consumer, asphalt shingle waste into a finished manufactured product called NewBoard. NewBoard is made with 80 percent recycled asphalt roof shingle and is used to make products for commercial roof applications, as well as applications such as waterproofing, walkway boards and road side sound insulation.

## LinkUp blog

Be sure to check out the [LinkUp blog](#) where you will find news and updates on the program's focus materials. We also invite you to post comments, news and resources.

## Partner update

*News about LinkUp partners working with LinkUp focus materials or other recyclable materials*

## Bedrock Industries

Recycled glass from Hawaii may soon end

One solution that keeps both glass recycling rates and quality high is a bottle bill or container deposit system" Rounds said. This type of bill taxes consumers when they purchase glass containers, then makes that money redeemable once the glass container has been turned in. Eleven states currently employ this incentive, including Oregon.<sup>11</sup>

In 2005 the Northwest Product Stewardship Council and the City of Tacoma analyzed the benefits to Washington State of implementing a container deposit system. Study results showed that enacting such a system would recover more containers at less cost than other recycling systems.

The Washington State Beverage Container Recycling Initiative, however, is not entertaining proposals that involve pursuing container deposit systems. The Initiative is a stakeholder process designed from the beginning to explore ways to increase beverage container recovery that all stakeholders could agree with — so container deposit systems were taken off the table. Instead, the Initiative is asking for proposals that use various "incentives" such as coupons, merchandise, donations, and lottery tickets, to increase container recycling. In addition, the proposals must include partnerships with key organizations such as brand owners, bottlers, grocers, retailers, existing and proposed buy-back centers, non-profits, recycling haulers and sorting facilities that will share the costs and/or participate in the implementation of the program.

### **New effort to recycle glass**

One Washington company is doing its part to increase the use of recycled glass. Cameron Family Glass Packaging has secured a \$109 million dollar financing deal and has broken ground to create a new glass manufacturing facility in Kalama in Cowlitz County. The 175,000-square-foot facility will be the first built in the U.S. in 30 years to manufacture glass solely for the wine industry. Expected to open in October 2008, it will also be the first of its kind to generate zero emissions<sup>12</sup> and the world's largest eco-friendly wine bottle manufacturing facility.

As part of its "green" approach, the company will use 25 to 80 percent recycled glass, most of which will come from recycling operations in the Pacific Northwest. It will also launch recycling programs in surrounding communities where glass is currently being dumped into landfills<sup>13</sup>.

### **Increasing glass recycling**

[King County LinkUp](#) recognizes the potential for increased glass recycling. It has designated [container glass](#) as a priority material for 2007 and is looking to identify new markets as well as expand and strengthen existing markets for this abundant material.

"Glass recycling presents a unique challenge. It can be recycled over and over again into new products," said Kris Beatty, [LinkUp](#) program manager. "However, we will continue to see glass go to low-value uses or disposal unless barriers along the supply chain can be remedied, including material breakage during collection, ineffective sorting and contamination."

up in products from Seattle-based [Bedrock Industries](#). The company recently met with glass recyclers on Oahu and collected glass samples. Now Bedrock is exploring ways to add new value to Hawaii's glass.

### **L&S Tire**

[L&S Tire](#) is part of a team of companies working to remove 381,700 tires in 16 tire piles across Washington. The tires will be removed and hauled to processing facilities and separated for reuse, recycling or disposal. The Washington Department of Ecology awarded the \$600,000 contract in May 2007 and clean-up work is expected to be completed by September.

### **Urban Hardwoods**



[Urban Hardwoods](#) was recently featured in a [Seattle Times article](#) for its work to turn salvaged trees into custom furniture. The company opened a new showroom early this year and is now offering furniture and wood slabs on its Web site.

### **News you can use**

#### **Third Asphalt Shingle Recycling Forum**

The US EPA, Federal Highway Administration and Construction Materials Recycling Association will convene the Third Asphalt Shingle Recycling Forum, Nov. 1-2 in Chicago. Topics covered will include mix designs for hot mix asphalt, health and safety issues in processing, market development incentives, best management practices, economics, and other emerging issues. Learn more and register online at [www.shinglerecycling.org](http://www.shinglerecycling.org).

#### **Single stream best practices**

[Conservatree](#) has published a Single Stream

King County will be working with the suburban cities to consider options for improving glass recycling as it updates its Comprehensive Solid Waste Management Plan, which will be completed in 2008.

Other cities, counties and states across the nation continue to look for ways to improve glass recycling markets. To be successful, they must consider all stages of recycling, from the residents and businesses that generate the material, to hauling companies, material recovery and processing facilities and finally to the end markets that purchase recycled glass. Finding a balance that encompasses all of these interests will determine the future success of glass recycling.

- 1 Interview with Steve Rounds, General Manager at Fibres International. June 18, 2007.
- 2 [Market Assessment for Recyclable Materials in King County](#) (PDF, 595 K), 2006, pp 40. This number was calculated based on 2002 waste composition data applied to King County's 2005 waste disposal forecasts.
- 3 [Container Recycling Institute graphic](#)
- 4 Waste Monitoring Program (PDF) [2006 Material Recovery Facility Assessment](#), pp 6.
- 5 [Market Assessment for Recyclable Materials in King County](#) (PDF, 595 K), 2006, pp 42-45.
- 6 [Glass Packaging Institute Web site](#)
- 7 [Washington State Beverage Container Recycling Initiative Stakeholder Partnership presentation](#)
- 8 [Pierce County Public Works and Utilities glass recycling](#) Web page
- 9 "ONE FULL YEAR: Single-Cart Curbside Recycling." Pierce County Department of Public Works and Utilities report. August 2006.
- 10 "ONE FULL YEAR: Single-Cart Curbside Recycling." Pierce County Department of Public Works and Utilities report. August 2006.
- 11 [Container Recycling Institute Bottle Bill Resource Guide](#)
- 12 Interview with James Cameron, Cameron Family Glass CEO June 2007
- 13 Cameron Family Glass Packaging press release "[First Wine Bottle Glass Plant in 30 Years to be Built in the Port of Kalama, Washington: Pittsburgh's Cameron Family Puts Its History Behind \\$109 Million Green Project](#)"
- 14 The Container Recycling Institute, [2020 Vision: Setting out Sights on Zero Beverage Container Waste](#)

## King County focus

### Diverting waste from deconstruction

In an effort to minimize deconstruction waste, various King County programs are exploring new approaches to demolishing buildings with the greatest potential for reusing components and diverting waste from landfills.

"There are a lot of reusable and recyclable materials from demolition in our landfills and therefore a lot of potential," said Kinley Deller, King County Waste Reduction Specialist. "King County is proud to be exploring this potential and helping to educate professionals and homeowners alike."

In 2006 [King County Solid Waste Division](#), along with Washington Department of Ecology and King County Housing Authority, performed studies to test techniques for hybrid deconstruction—a balance between traditional labor-intensive techniques and full demolition. The study noted that a significant disincentive for salvaging materials is the increased labor costs and time as well as the contamination of some materials with asbestos or lead paint.

The project also involved studies to discover the marketability of used building materials such as vinyl siding, whole deck sections, mid-grade cabinets and hollow-core doors. It was concluded that the value of salvaging

Best Practices Manual and Implementation Guide as a resource for recycling managers. The guide's recommendations are "directed towards solving problems and maximizing the benefits" of a single stream recycling program. The documents are available for [download](#).

### Recycling education

[National Recycling Coalition's 26th Annual Congress & Expo](#) will be held Sept. 16 - 19 in Denver. Topics include The Road to Zero Waste: Maximizing Recycling in Your Facility, Developing Alternative Markets for Traditional Recyclable Materials and Rebranding Recycling In Your Community. Check out the [Schedule of Events](#) to find out more.

these materials should be weighed against the costs of time and labor to salvage them. In this particular study, the value of the salvaged materials did not justify full hybrid deconstruction.

[GreenTools](#), King County's green building program, is in the process of developing resources such as tip sheets and educational videos to educate experts and homeowners on strategies to diminish deconstruction waste. The materials will cover topics such as the assessment of projects for hybrid deconstruction potential, the use of fork lifts for removing roofs and how to handle eaves/truss ends with lead paint in such a way that isolates them from other potentially reusable materials. They will also cover the removal of potentially reusable construction materials such as, cabinets, doors and vinyl siding and detail how to panelize (dividing portions of walls and floors into sections so that they may be salvaged with minimal time spent deconstructing on-site).

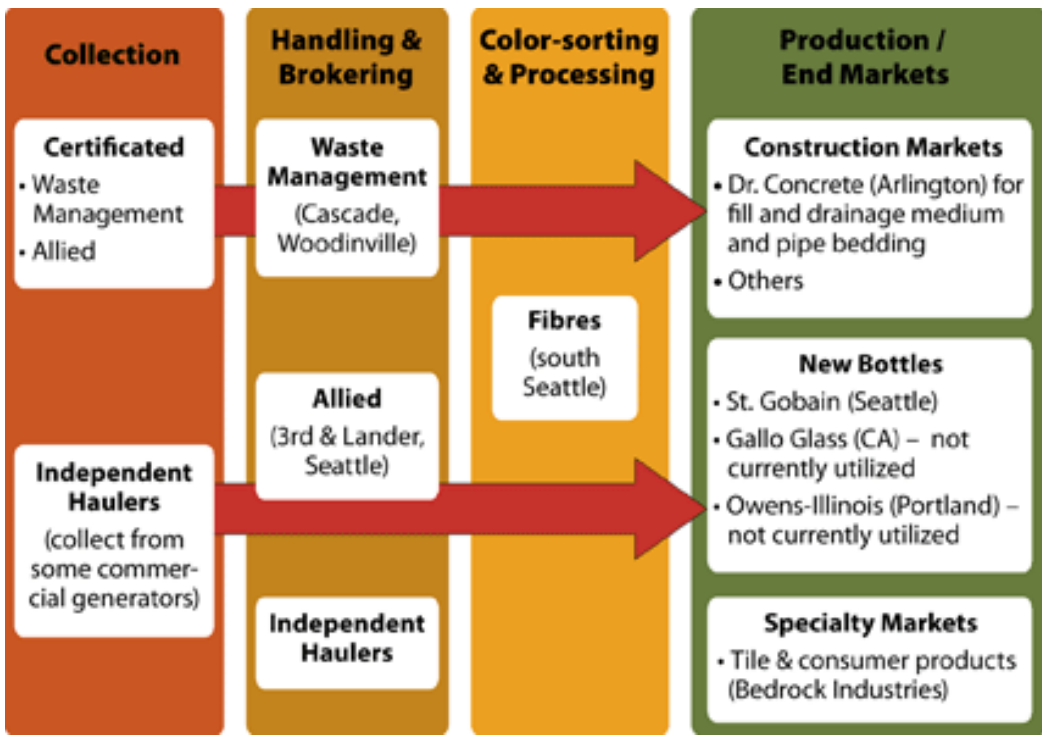
The benefits of salvaging deconstruction materials have also been outlined in a series of [case studies](#). The 2005 demolition and deconstruction of the Westfield Southcenter Doubletree Inn is a good example. The project owner allowed American Development Company to perform deconstruction work before the hotel was demolished. The result was the salvage of more than 66 tons of used building materials which equaled approximately \$10,000 in value in addition to the savings in disposal fees.

In addition, King County has sponsored development of the [Design for Disassembly](#) (DfD) building process and has published an online DfD guide. The guide provides information about the building design process allowing for a long building life and easy disassembly and recovery of products, parts and materials. It provides information on how to maximize economic value and minimize environmental impacts through the design of flexible interior space, reuse, repair, remanufacture and recycling.

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## Fast facts

### Current Supply Chain for Recycled Glass Containers Generated in King County



Source: "2006 Market Assessment for Recyclable Materials - Final Report." Prepared by Cascadia Consulting Group, Inc. for King County Solid Waste Division, September 2006. P 42.

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