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King County LinkUp

A NEWSLETTER TO EXPAND MARKETS FOR RECYCLED MATERIALS

Fall 2007

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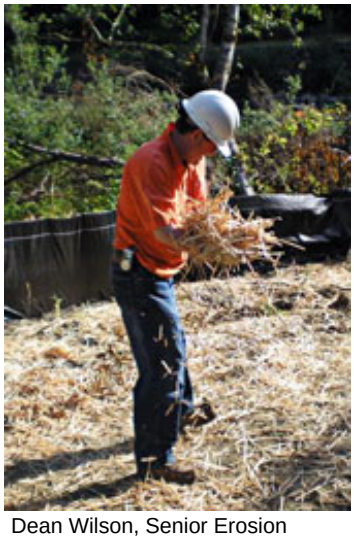
Building new markets for recycled urban wood



Dean Wilson, Senior Erosion Control Designer for King County applying WoodStraw product at the Mt. Si Bridge project.

Nationally and locally, a significant amount of recyclable urban wood is ending up in landfills. Urban wood includes dimensional lumber and engineered wood scrap from construction and some demolition activities, pallets, crates, finished and unfinished furniture, manufacturing scrap, and some roofing and siding. Increasingly, organizations are developing new markets for recycled urban wood in efforts to reduce this waste and make use of this valuable resource. This means innovative new products and the growth of emerging small businesses.

Wood makes up nearly 17 percent of the material going to landfills in the United States.[1] It also represents up to half of residential new construction debris in the waste stream in the United States.[2] In King County, an estimated 94,000 tons of recyclable urban wood is disposed each year.[3]

The primary use for recycled urban wood in King County is hog fuel, which is burned in industrial boilers for energy. Approximately 82 percent of all recyclable wood is sold to this market.[4]

Local companies continue to find new uses for recycled urban wood and create new opportunities for consumers and organizations to decrease their reliance on virgin materials and increase the amount of wood that is reused or recycled.

WoodStraw™

King County's Department of Transportation (DOT) is considering adding the use of WoodStraw to its list of Best Management Practices (BMPs) for future projects. LinkUp partner, Forest Concepts, developed and manufactures WoodStraw, a recycled wood-strand erosion control mulch

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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.

Recycled gypsum wallboard goes into cement

Construction and demolition processing company, Recovery 1, Inc., located in Tacoma, is now making weekly deliveries of recycled gypsum wallboard to Ash Grove Cement Company's Seattle plant. The recycled gypsum is a replacement for virgin gypsum in cement production. Terry Gillis of Recovery 1, Inc. anticipates up to 2,500 tons of processed recycled gypsum will be delivered to Ash Grove each month.

Commingled Recycling Systems Standard and Guidelines Initiative summary

In July 2007 the Commingled Recycling Systems Standard and Guidelines Initiative stakeholders, convened by the U.S. Environmental Protection Agency Region 10, met in Seattle to kick off their one-year workgroup. The workgroup's mission is to develop a standard and guidelines for commingled recycling systems that will reduce cross-contamination of recycled materials, increase the quality and quantity of materials recycled, and capture the highest percentage of materials that are

made from veneer manufacturing wood waste. It's an alternative to agricultural straw, and can be used for a variety of projects including residential and commercial site development, road construction and fire restoration.[5]

"We turn it into a valuable material," explained Mike Perry, Chief Executive Officer at Forest Concepts.

There are multiple benefits to using WoodStraw instead of ordinary straw. WoodStraw is designed to withstand wind up to 45 mph, whereas ordinary straw typically blows away in winds of 15 to 17 mph. Other advantages WoodStraw has over agricultural straw include being free of troublesome weed seeds, allowing water that falls onsite to infiltrate into the soil, and lasting almost 20 times longer.[6]

WoodStraw is already on the Washington State Department of Ecology's BMPs list and is currently being tested to be included on the King County DOT BMPs list. In July 2007, 66 bails of WoodStraw were spread over a site on King County DOT's Mt. Si bridge replacement project to test performance for preventing erosion.

"It's great to use recycled products on the site," said Dean Wilson, King County DOT Senior Environmental Engineer who is overseeing the project. "We're really excited about this product."

If the Mt. Si project produces positive results, WoodStraw will likely be added to the King County BMPs list. Once added, King County DOT will be able to add it to specifications and contract documents as an optional material for contractors.

EcoTop™ and EcoClad

In September 2007, PaperStone composite surface creator Joel Klippert of Klip BioTechnologies announced two new bio-composite surface products developed from recycled wood materials – EcoTop and EcoClad. EcoTop is designed for interior countertops and tabletops while EcoClad is for exterior siding. Each product is made from a 50/50 blend of bamboo fiber, a rapidly renewable resource, and Forest Stewardship Council-certified wood pulp made by Pope and Talbot from urban wood waste sourced from construction and demolition recycler and LinkUp partner, Recovery 1, Inc.. Bamboo fiber, which is characteristically three times longer and stronger than those of wood fiber, make the products superior to surfaces composed of recycled wood fiber alone. Both EcoTop and EcoClad are available for purchase in 10 colors.

In developing these products, Forest Concepts and Klip BioTechnologies are diversifying the markets for urban wood and contributing to urban wood waste recovery in the central Puget Sound area.

1 "Successful approaches to recycling urban wood waste." Solid Waste Association of North America, 2002 [link to: http://www.treesearch.fs.fed.us/pubs/9729].
2 United States Environmental Protection Agency. "Basic Information About Wood Waste." [link to: http://www.epa.gov/epaoswer/non-hw/organics/wd-basic.htm]
3 Market Assessment for Recyclable Materials in King County (PDF, 595 K), 2006, pp 104. This number was calculated based on 2002 waste composition data applied to King County's 2005 waste disposal forecasts and interviews with local haulers, processors, and recyclers.
4 Market Assessment of Construction and Demolition Waste Materials (PDF, 242 K), 2004, pp 25. Estimate based on interviews with local haulers, processors, and recyclers.
5 WoodStraw website [link to: http://www.woodstraw.com/]
6 Interview with Dean Wilson, Senior Environmental Engineer for King County Department of Transportation

intended to be recycled. Stakeholders involved in the process include collectors, material recovery facilities, mills, non-governmental organizations, and local and state government agencies.

If you are interested in participating or receiving more information, please contact Melissa Winters.

3rd Asphalt Shingle Recycling Forum

Several representatives from King County and the local paving and shingle recycling industries attended the 3rd Asphalt Shingle Recycling Forum in Chicago in early November to learn more about the latest in tear-off shingle recycling. The event was hosted by the U.S. Environmental Protection Agency, the Federal Highway Administration and the Construction Materials Recycling Association. Forum presentations are available for viewing.

Partner update

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

Move and Sale

LinkUp Partner Rainier Wood Recyclers recently announced that it has moved its headquarters to its Fall City location where the company continues to offer the same wood recycling services and products it has offered for the last two decades. Its portable recycling services are also available throughout the state. Contact Rainier Wood Recyclers at 425-222-0008 to learn about their services.

Glacier Recycle, LLC has purchased Rainier Wood Recycler's Auburn facility. Glacier will continue to accept wood waste at its newly acquired facility—one of the largest and most sophisticated wood recycling facilities in the country—and has also begun to provide construction debris recycling. Contact Glacier Recycle at 253-333-6565 for more information.

Expanding product lines

The makers of Squak Mountain Stone have introduced a new product line. Tiger Mountain Innovations now offers Trinity Glass Products, a composite of low-carbon cement and recycled glass that is handcast and hand finished. Trinity comes in several sizes of slabs and tiles in 10 colors. The company launched the product at the 2007 West Coast Green Residential Building Conference and Expo in September.

King County focus

King County project to explore recycling asphalt shingles
An estimated 17,000 tons of asphalt shingle waste is generated each year in King County. Although recyclable, 16,000 tons of that material is sent to landfill disposal. In order to address this problem LinkUp has made asphalt shingles a priority material and is working to develop a market for it. To achieve this goal, LinkUp hosted an asphalt shingle stakeholder meeting in August 2007. Approximately 30 participants representing local paving companies, shingle recyclers and local and state government agencies attended the meeting and provided input on LinkUp's proposal to conduct a paving demonstration using tear-off asphalt shingles in hot-mix asphalt.

Hot mix asphalt is the most feasible use of this material. According to expert Dan Krivit, while other uses for recycled asphalt shingles can and should be explored, recycling it into hot-mix asphalt is the most researched and has the greatest immediate potential to help divert this material in King County.

"As long as quality control practices are in place, there is a lot to gain from using recycled asphalt shingles as a feedstock material for hot-mix asphalt," said Krivit.

Stakeholders agreed that there are no compelling reasons to not pursue the project, assuming that tight quality assurance and quality control practices and procedures are implemented. There are multiple facilities nation-wide recycling tear-off shingles into hot-mix asphalt, and a demonstration project could be developed using the experiences of trials performed by other states as a basis of design.

At the meeting, Krivit offered many benefits to recycling tear-off recycled asphalt shingles into hot-mix asphalt. Some of these benefits include reducing landfill contributions, rutting prevention (preventing deformation of the pavement in wheel paths caused by the passage of vehicles) and reducing the need for expensive virgin asphalt in hot-mix asphalt. Based on preliminary research conducted by the LinkUp team, hot-mix asphalt manufacturers cited cost-savings and the desire to be environmentally conscious as the primary reasons they would consider using tear-off shingles in their mix.

Stakeholders also discussed engineering challenges that need to be managed such as asbestos screening, nails and impacts on the final hot-mix asphalt binder. There is a need for a tight recycled asphalt shingle specification – for both any engineered use in hot-mix asphalt, and for environmental and employee health protection.

"There is real potential to develop a hot-mix asphalt market for asphalt shingle waste generated in King County, and to have our state and local transportation officials participate in a demonstration first-hand is the right first step," said Kris Beatty, King County LinkUp Program Manager. "That our August stakeholder meeting was so well attended is a strong indication of the high interest in exploring this potential."

A project advisory group that represents various stakeholder groups was formed and met in October to begin making recommendations for success of the project. The next step will be to use the recommendations to identify an appropriate construction project for the demonstration and work with participating agencies to draft a project plan.

Tiger Mountain Innovations will also be featured in two new TV shows. Carter Can starring Carter Oosterhouse on HGTV will highlight Squak Mountain Stone kitchen countertops while PBS' Alter Eco, about the sustainable living movement, will be filming the Tiger Mountain Innovations office. Both are in the process of filming and no air-date has been set yet.

New glass aggregates
Trivitro Corp. is now offering glass 5/8 inch minus construction aggregate for consumers to use in place of gravel. This new product is made of 100 percent clean recycled glass. To learn more, call 425-251-8340.

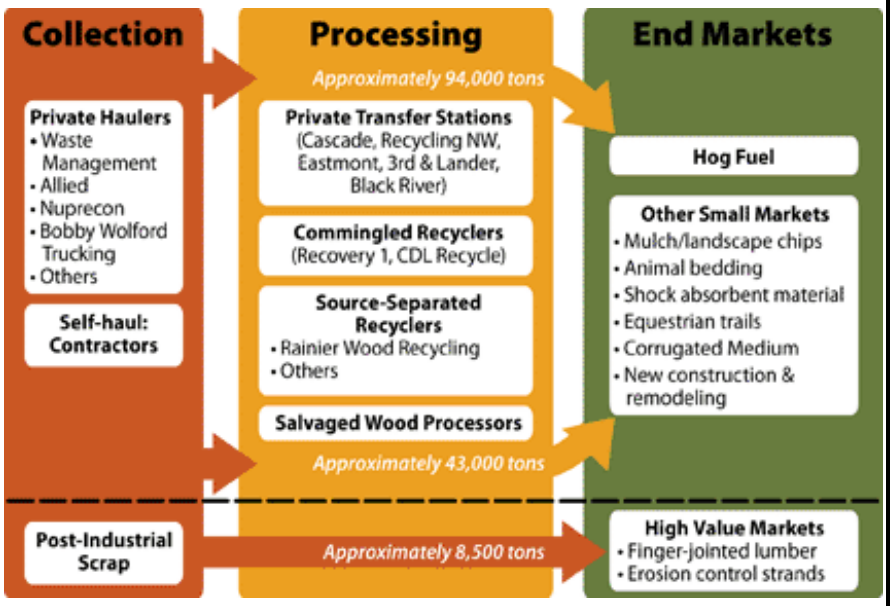
News you can use

King County's 'Best Workplaces for Recycling'
King County has named 21 local companies on their first annual "Best Workplaces for Recycling" list. These companies are recognized as leaders in promoting recycling internally and making recycling easy for employees.

Funds for turning waste into useful products
In order to promote innovative ways to create more useful products from organic material that would otherwise go to waste, the Washington Department of Ecology will award up to $740,000 in research and outreach grants. The funds will be used to study and provide education and outreach on ways to turn organic waste into energy, fuels or other useful bio-products such as soil amendments, cosmetics, food and nutrition products. For more information, visit the WA Department of Ecology.

Fast facts

Supply chain for urban wood in King County in 2006



Source: Market Assessment for Recyclable Materials in King County, 2006, pp 106

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