

MANAGING INDUSTRIAL WOOD WASTES: SUMTER COUNTY WOOD REUSE & EXCHANGE CENTER

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Early log homes; covered wagons; construction of the first transcontinental railroad--the importance of wood in the building of America is undisputed. Today wood is still an integral part of residential home construction and wood ties can still be found supporting the country's railroad tracks. However the popularity of treated wood in its many modern applications has led to concerns about the impact of wood waste on the environment and how major users of wood and wood products can be part of the solution.

One modern day use of wood that could not have been imagined by our early ancestors is the wood pallet. It is safe to say that the material that helped build America is now the material essential to helping move American products. The pallet industry acknowledges that 42 percent of all hardwood lumber harvested is used in pallet manufacture. And almost half of all pallets produced are designed for only one use. Since pallets are bulky and difficult to dispose of, and landfill restrictions on the disposal of wood waste are becoming more common, it's not surprising that the industry has taken steps to facilitate internal recycling programs. Even so, KCI's research found that obstacles still exist such as difficulty dealing with contaminated wood, the lure of low tipping fees, and the absence of established end markets. The remanufacture or repair of wood pallets has been embraced by the wood pallet industry as a major waste reduction initiative. Pallet repairs are generally done in-house, contracted out to repair facilities, returned to manufacturers or suppliers, or in some cases pallets are pooled in a local partnership.

The Reusable Pallet and Container Coalition (RPCC) reports that seven million tons of low quality wooden pallets are disposed of each year in the United States at a cost of about \$400 million dollars. Companies like Home Depot, Procter and Gamble, and WalMart have initiated a reusable pallet program for at least part of their pallet usage however reusable pallets nationally still only comprise three percent of the total marketplace. RPCC promotes the program as allowing businesses to utilize stronger pallets, realize improved safety, and spend less operational time focusing on pallet management issues.

A National Wood Pallet and Container Association (NWPCA) survey in 1997 showed the percentage of pallets being landfilled had dropped to 28 percent compared to 60 percent just four years earlier. The survey also revealed that, on average, pallets are reused nine times by the same pallet user. For pallets that have passed the point of repair or reuse, approximately 41 percent were used for fuel while just over 38 percent were being processed for mulch, compost, particleboard material or other use.

Since the study was completed, the pressure treated lumber industry has come under fire in Florida, as well as other areas, regarding the potential health risks in certain applications of arsenic-treated wood. According to the University of Miami, over 28 million cubic feet of chromated copper arsenate (CCA) treated wood was sold within Florida during 1996. Sixty-two percent of this treated wood was produced at the 27 treatment plants in the state. Even in the absence of regulatory requirements, Florida solid waste managers are focusing their concern primarily on the use of pressure treated wood for playgrounds and the potential environmental hazards associated with improper handling and

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disposal of wood waste by end users. The FDEP feels that the majority of treated lumber in the state is contained within construction and demolition processing sites where it is not burned but could leach into groundwater. These concerns prompted additional studies and research by the university community as well as private industry.

Amidst all this attention, the American Wood Preservers Institute (AWPI) points out that treated wood has been tested for decades and the industry has established procedures and guidelines for disposal and use of the product. And the Environmental Protection Agency (EPA) has evaluated the use of treated wood in playgrounds and other applications with the conclusion that it does not pose an acute or chronic toxic hazard. Pressure treated wood has been produced for well over a hundred years and the CCA type of treated wood has been around since the 1930s. And beginning in 2001, the AWPI began working more closely with the EPA to enhance their consumer awareness program and disseminate information to businesses and individuals about the proper use and handling of treated wood products. In 2002, many wood preservative manufacturers decided to seek and amend their respective registrations with the EPA to transition from CCA to a new generation of wood preservatives for use in the consumer and residential treated wood markets by December 31, 2003. CCA will continue to be produced for industrial end applications such as highway construction, utility poles, and pilings.

A year 2000 survey of Florida counties, conducted by KCI, revealed that 71 percent do not offer a wood recycling program for large generators even though 33 percent of the counties surveyed indicated they had received inquiries from the commercial/industrial sector about wood pallet or wood waste disposal alternatives. Wood waste management and recovery is should be Florida's next planning phase. Program development is critical now and it is time to begin taking practical action for wood waste recovery and proper disposal.

More recently, attention to pressure treated wood and wood waste handling issues has been enhanced by increased coverage in industry trade and mainstream publications. Attention is also focused on a pilot project in Sumter County, Florida involving countywide separation of treated and untreated wood prior to disposal. A Wood Reuse & Exchange Center was constructed to house separated, useable wood for community reuse at no charge. This program, funded by an FDEP innovative grant in the amount of \$269,000, will develop and implement best management and handling practices for wood waste as well as encourage business, government and residents to separate treated and untreated wood for proper reuse, recycling or disposal.

A good corporate model is Florida Power and Light Corporation (FPL) of Juno Beach, Florida, which has taken an aggressive in-house approach to dealing with untreated wood products. The company operates a wood recycling facility, which produces two grades of mulch. In addition, an in-house pallet reuse program is operated along with the management of re-use agreements involving reel recovery operators and wire and cable vendors. FPL also captures a variety of other wood waste including vegetative material from line clearing projects as well as crates and broken furniture. In 2000, the company recovered or reused about 3,600 wood reels and scrapped or mulched another 1,100 reels. In addition, the company processed nearly 5,500 tons of wood waste—all part of a continuing program of combining reuse and recycling to capture as much material as possible.

For the management of wood waste by consumers or commercial entities, a number of workable options are available. Waste reduction or reuse is effectively illustrated by local Habitat for Humanity ReStores, which accept, used wood and other construction materials, which are resold or used in construction projects. Unused wood and other materials can also be donated to local Habitat building projects. Some of the more successful Habitat ReStores around the country have reported generating enough revenue and materials to build as many as 10 or more houses each year. Habitat

affiliates are encouraged to establish a specific area on each construction site dedicated to recycling and reuse.

In addition, a number of entrepreneurs across the country have established furniture building cooperatives and businesses using scrap wood and old pallets as a primary material source. Since pallets are constructed largely of hardwoods, skilled hobbyists also find them useful in building quality items. In fact, FDEP's Bill Hinkley, Chief of the Bureau of Solid and Hazardous Waste, developed an interest in pallets after seeing huge piles of them discarded at landfills. Hinkley says he "discovered pallets made from oak, maple, hickory, cherry, mahogany and many other hardwoods and has made them into furniture, jewelry boxes, picture frames and other items." He points out that intensive labor is involved in breaking down the pallet, planing, sanding and finishing the wood "but the results can be extraordinarily beautiful."

Another waste reduction option involves the use of alternative materials such as plastic or steel pallets and recycled plastic lumber. Many vendors claim over 100 trips with a single plastic pallet. These pallets now can offer better fire resistance with a new resin recently developed by GE Plastics. And steel pallets, although heavy, are extremely durable and strong. Also gaining in popularity with businesses are collapsible or reusable containers, which reduce waste and save space. Even with such marketable advantages, these alternative containers are in many cases still a small percentage of the marketplace.

Several of the recycling options available could be utilized in many communities through partnerships with various local entities or through agreements with public sector solid waste recovery programs. Many of the innovative and effective recycling options for wood waste involve partnerships creating a new market or utilizing wood in place of a non-renewable feedstock. Understanding that economic and geographic considerations can impact the feasibility of markets, Table 1 lists a few of the common recycling options available for wood waste.

Table 1: Wood Waste Recycling Options

Landscape mulch or groundcover
Animal bedding or litter
Compost or soil amendment
Landfill cover or road stabilization
Wood-Plastic composite material
Wood as a renewable resource-Fuel
Concrete fill or road barriers
Wood pellets for fuel or kitty litter
Pulp and paper
Hardboard and fiberboard
Particleboard
Densified wood products such as logs or charcoal
Packaging filler (sawdust and shavings)
Landfill cover

The expansion of wood waste recovery programs in Florida should ultimately be promoted through the established network of recycling coordinators and solid waste managers. However, many counties are not making wood management a priority until the State's regulatory position becomes more clearly defined. At the appropriate time and depending on available funding, recycling coordinators are well positioned to provide the most cost-effective means of disseminating information about wood waste disposal to local communities. In addition, coordinators are in a unique

position to help forge useful public-private partnerships to strengthen traditional markets and help develop new market opportunities.

Over 19 million tons of industrial wood output was received by Florida wood-using facilities in 1997. Proper wood waste management is clearly a priority as Florida's population, and waste generation levels, continues to rapidly expand with increased construction and movement of goods and services. For more than a decade, the easily collected residential recyclables in Florida have received all the funding and recovery promotion. As pressure mounts to further increase recovery of high volume materials such as wood, states will be called upon to provide direction and funding to facilitate the proper handling and marketing of such targeted materials. This will require a better understanding of quantities and types of material, the regulatory climate, and the available options for wood waste management. Even though disposal options continue to present economic and environmental challenges, the groundwork has been established for solid waste managers to evaluate the waste reduction and reuse options for this high volume material, which is vital to the nation's economy.

We started with Creosote, then Pentachlorophenol, went to CCA, now it looks as if we are headed for another treatment solution, ACQ; but will researchers find potential health hazards and leaching issues with this new alternative treatment? It's time to stop looking for the solutions to our disposal concerns in more research that continues to challenge itself. It is now time to take active, practical approaches to develop recovery programs and better informed consumers who dispose of these materials.