

# CHelsea CENTER FOR RECYCLING AND ECONOMIC DEVELOPMENT

## Newsletter

## Fall 2000

### MANUFACTURER PROFILES:

#### CREATIVE PAPER AND ERVING PAPER

Using lower grades of recycled paper to manufacture new paper products is one way to increase our state's recycling rate while lowering feedstock expenses for manufacturers. But bringing these benefits to fruition often demands solutions to technical problems associated with using materials that can be contaminated with laminated plastics, adhesives, box staples, and other unwanted materials.

With the Chelsea Center's financial assistance, two Massachusetts manufacturers tackled those barriers and discovered how to change their manufacturing processes to increase their use of lower grades of paper without sacrificing product quality. Creative Paper, Inc. in Worcester manufactures corrugated medium and inside liner for their sister company, Creative Packaging, and a host of other corrugated box companies in North America. With a grant from the Chelsea Center, Creative Paper redesigned its stock prep system to overcome the hurdles of using a lower grade of feedstock. By installing new equipment and automating parts of the pulping process, Creative Paper can more efficiently remove contaminants and maximize the amount of paper fiber recovered, even from low-grade mixed paperboard.

Creative's pulping process is now extremely efficient and cost-effective and has helped to increase the paper machine's production. "The grant from the Chelsea Center was invaluable," says Dick Perlman, vice-president of Creative Packaging and Paper. "It allowed us to meet our goal of using recycled fiber from a broader range of sources."

Erving Paper Products of Erving, which manufactures napkins and other specialty papers, completed a similar project with the Chelsea Center's assistance. To increase its use of mixed office paper, which is significantly cheaper than the coated book paper the company previously recycled, Erving set out to improve its deinking system. Rather than making risky investments at the mill itself, Erving worked with the Beloit Research Center to simulate a new deinking system in the lab.

*continued on page 2*

#### NEWARK GROUP MILL TO RECYCLE CURBSIDE NEWSPAPER

The Newark Group will be reopening the James River/IRC paper mill in Fitchburg. According to Johnny Gold of the Newark Group, the mill will use 350 tons of residential curbside newspaper per day to manufacture laminated chipboard for the book cover industry. After a \$100 million renovation, according to Gold, the facility will be the most modern boxboard mill in the country. Renovations will be complete in August 2001, with production beginning in November 2001. Anyone interested in selling ONP to the Newark Group for the Fitchburg mill should contact Moe Banville of North Shore Recycled Fibers at (978) 744-4330.

### SERVICE PROVIDER PROFILE:

#### MASSACHUSETTS MANUFACTURING EXTENSION PARTNERSHIP

If you manufacture a product in Massachusetts, the Massachusetts Manufacturing Extension Partnership (MEP) should be in your address book. The MEP is part of nationwide network of more than 70 nonprofit centers whose sole purpose is to provide small-and medium-sized businesses with the help and solutions they need to succeed. Through MEP, even the smallest firms in Massachusetts can receive assistance from more than 2,000 manufacturing and business specialists nationwide, including staff who understand the intricacies of doing business in Massachusetts.

MEP specialists can help with a wide variety of problems, including:

- **BUSINESS PLANNING.** MassMEP focuses on increasing productivity, growing sales and profits, and stabilizing profitability.
- **LEAN ENTERPRISE.** Improve quality, cost, lead time, and customer satisfaction with MEP lean solutions.
- **eBUSINESS.** MassMEP solutions enable companies to improve customer satisfaction, broaden market share, and ensure their viability in the future eBusiness world.
- **INTERNATIONAL DEVELOPMENT.** Obtain global success through national and international partnerships, joint ventures, and strategic alliances.
- **TECHNOLOGY TRANSFER.** Through the transfer and commercialization of new technologies, MassMEP helps companies gain a solid business advantage and successfully grow in a globally competitive environment.
- **WORKFORCE DEVELOPMENT.** MassMEP, through an analysis of company's resource needs, develops a training program that aligns employee skills training with the company's strategic direction.

According to Lorin Rees, an MEP project manager (see story on page 2), MEP can help businesses implement what's called "lean manufacturing," an approach many view as the foundation of a high-performance company. "Lean manufacturing is about reducing all types of waste in a manufacturing process," says Rees, "not just pollution." MEP can help you use lean manufacturing concepts to gain advantages over competitors by improving your quality and customer service, while decreasing your costs, lead times, and waste.

For more information about how MEP can help you solve your business problems and become more efficient and profitable, call (800) MEP-4MFG, send an email to [info@massmep.org](mailto:info@massmep.org), or visit [www.massmep.org](http://www.massmep.org).

## NEED HELP SELLING YOUR PRODUCT TO STATE AGENCIES?

The Massachusetts Operational Services Division (OSD) is helping manufacturers sell their recycled products to state agencies using an innovative pilot purchasing program. Under the Pilot Purchase Program, OSD provides funds to purchase environmentally preferable products, including those with recycled content, for use by state agencies, authorities, and municipalities in Massachusetts. These agencies test the products and offer feedback on their performance. Products that test well may be added to a statewide purchasing contract, which is an agreement between the OSD and selected contractors to provide a wide variety of products and services to state and local entities.

Acknowledging the state's innovative programs to increase its purchase of recycled products, the National Recycling Coalition/Buy Recycled Business Alliance honored the OSD with its 2000 "Best Government Buy Recycled Program" award. Thanks to the OSD's efforts, executive agencies have increased their purchases of recycled products from \$2.8 million in FY 1992 to over \$43 million in FY 1999. More than two dozen statewide contracts, offering hundreds of environmentally preferable products, have been established. To learn more about how your company can work with the OSD, contact Eric Friedman at (617) 720-3351 or visit [www.state.ma.us/osd/enviro/enviro.htm](http://www.state.ma.us/osd/enviro/enviro.htm).

## NEW REPORT PROVES IMPORTANCE OF RECYCLING TO ECONOMY

A new study released by the Northeast Recycling Council documents the business side of recycling and reuse and its importance to our economy. According to the study, recycling and reuse are a \$44 billion industry in the Northeast, with 13,000 businesses employing over 206,000 people and paying wages in excess of \$6.8 billion. Approximately 4% of overall manufacturing employment in the region is related to recycled-content product manufacturing.

The report shows that over 19,000 people are directly employed by the recycling industry in Massachusetts, and the close to 1,500 establishments employing them generate estimated annual receipts of over \$3.5 billion. The indirect and induced effects associated with these activities include 20,000 additional jobs and \$142 million in taxes, fees, and other revenues brought into the Commonwealth's coffers. When you include recycling's direct impacts, this figure exceeds \$200 million.

For more information on the report, visit [www.nerc.org](http://www.nerc.org).

### *Manufacturer Profile: continued from page 1*

As a result of the successful simulation, Erving has installed the new equipment and significantly increased its use of mixed office paper. However, market demand for increased quality of the end-product has somewhat offset their ability to use higher levels of mixed paper.

The Chelsea Center would like to acknowledge Gary Diadone, of the Merrimack Valley Manufacturing Partnership, for all the hard work he dedicated to the development and implementation of these projects. To learn more about these and other manufacturing research projects we have supported, visit our web site at [www.chelseacenter.org](http://www.chelseacenter.org) and click on "Publications" and scroll down to "Technical Reports."

## CHELSEA ReTERN FINDS A CAREER HELPING MANUFACTURERS

Two-time ReTERN Lorin Rees found his calling during his Chelsea Center-sponsored summer internships and is now assisting manufacturers as a project manager with the Massachusetts Manufacturing Extension Program (Mass-MEP). The Chelsea Center sponsors the ReTERN program, paying for senior or graduate-level college interns to work for a recycled product manufacturer to solve a business or technical issue.

During his first internship in the summer of 1999, while studying for his MBA at Boston University, Rees worked with Longleaf Lumber Company of Somerville. The company was salvaging rare wood from old mill buildings and warehouses and then remilling it for customers who used it for flooring and other architectural features. The company didn't know how much it was actually costing to produce the boards, so they couldn't reliably determine the product's profitability. Rees calculated the cost per board foot of reclaimed lumber, allowing the company to better understand their income and expenses, to adjust their prices, and to improve their profit margins.

During his second internship, Rees assisted the Sam Cohen Company in Brockton, a textile recycling firm. The firm offered several services, from making rags to brokering used clothing, but was not certain which activities were most profitable. Rees completed an activity-based cost analysis by product line to show the company which activities were profitable and which were not, allowing the owners to make well-educated, strategic decisions.



Lorin Rees, Mass MEP project manager and former Chelsea Center ReTERN

With two successful projects behind him, Rees had found his niche. "I wanted to keep working with small companies," he says. After his internships, Rees looked through the Chelsea Center's resource guide and found a listing for MEP. He called for more information and, after receiving his MBA in May 2000, landed a full-time position in July 2000. "My work at MEP is a continuation of my experience during the internships," says Rees. He particularly enjoys helping small companies who do not have the resources within their businesses to solve problems on their own. "When I was getting my MBA," says Rees, whose specialties are cost analysis and marketing, "I didn't even know this kind of work existed."

While he works with all types of companies at MEP, Rees still has a personal interest in waste reduction and recycling issues. "I would love to help maximize the synergy between the Chelsea Center, MEP, and the Department of Environmental Protection," says Rees. "Together, our work not only helps companies become more cost-effective, but it also generates jobs and reduces waste."

Through its ReTERN program, the Chelsea Center solicits projects from companies and then matches them with students. For more information about the program, manufacturers and students can contact Gail Harris at (617) 884-6237.

## CHELSEA CENTER AWARDS GRANTS FOR COMMUNITY ECONOMIC DEVELOPMENT THROUGH RECYCLING

The Chelsea Center will award close to \$100,000 to four Massachusetts communities and organizations to assist them in identifying ways to reuse recyclable materials. This year we received proposals from 18 communities, requesting a total of \$445,459 in grant funds. We are funding the following projects for 2001:

- The City of Springfield will conduct a baseline study for the development of an eco-industrial park. The planning department will document materials flows in the Springfield region and business-to-business transactions to identify recycling-based business opportunities for the park.
- The Center for Ecological Technology will develop a feasibility study for a wood pallet refurbishing facility in the Northern Berkshires. This will include identification of markets for uses of pallets and value-added products.
- UMass Lowell, through its Center for Family, Work and Community and community partners, will explore the potential for an urban food waste composting enterprise in the City of Lowell and will test the feasibility of vermicomposting technology.
- Millers River Community Development Corporation in Athol, with assistance from the Massachusetts Natural Resource Co-op, the Forest and Wood Products Institute at Mount Wachusett Community College, and community partners, will develop a business plan for a forest product wood recycling enterprise in the North Quabbin area. The study will include market and technological research, strategic planning, site location, and employment requirements for the facility.

## CHELSEA CENTER RESEARCH GRANTS AWARDED

The Chelsea Center has awarded several new technical research grants this year:

- UMass Amherst—For the application of powder processing techniques to recycle 100% reclaimed rubber powder from tires into new parts.
- Robert Kirby—To investigate the effect of manufacturing fused glass paving with a mineral additive.
- UMass Lowell—To further evaluate the use of aggregate from mixed plastics and fly ash in the manufacture of construction materials.
- UMass Dartmouth—Investigation of the use of shell chitin extracted from seafood processing waste to recycle nutrients in aquaculture effluents and residual dyes in textile wastewater.

As always, the technical reports resulting from these projects will be available on our web site or by calling our office.

## CHELSEA CENTER GRANTS AND INTERNSHIPS

We offer several grant programs for manufacturers, communities, and researchers. For additional information on any of these grant programs, visit [www.chelseacenter.org](http://www.chelseacenter.org) and click on "Programs and Services." Funds are limited, so please respond as early as possible.

### PRODUCT DEVELOPMENT AND TESTING GRANTS

**For Whom:** Manufacturers that are seeking to refine, develop, or test products using recovered feedstocks, or require testing to implement or improve their use of recovered materials

**How Much:** Up to \$5,000

**Deadline:** Open, but projects must be completed by June 30, 2001

**Contact:** Jodie Siegel at (617) 884-4324

### TRADE SHOW GRANTS

**For Whom:** Recycled product manufacturers who would like to market their products at a trade show

**How Much:** 50% of the cost of exhibiting, up to \$500 per year

**Deadline:** Open

**Contact:** Gail Harris at (617) 884-6237

### RECYCLING INTERNSHIP PROGRAM

**For Whom:** Massachusetts recycled product manufacturers with business or technical problems and seniors or graduate students with the skills to help

**How Much:** Intern stipend paid by the Chelsea Center

**Deadline:** Open

**Contact:** Gail Harris at (617) 884-6237

## MANUFACTURERS NETWORK FORMING

On September 20, fifteen manufacturers met to discuss the creation of the Massachusetts Recycled Product Manufacturers Network.

The network would help manufacturers through information sharing, training, and joint problem-solving on marketing, regulatory, and business issues. Manufacturers would drive the structure and agenda of the network, with the Chelsea Center providing staff support.

Based on input from the September 20 meeting, we sent a survey to more than 300 recycled product manufacturers about which issues the network should focus. A small steering committee of manufacturers will meet to prioritize these topics and set an agenda for following through. Michael Kane of Mount Auburn Associates has been hired to lend his expertise in setting up the network.

For more information about the Massachusetts Recycled Product Manufacturers Network, contact Amy Perlmutter at the Chelsea Center.

## **OPPORTUNITIES TO CONVERT TO RECYCLED FEEDSTOCKS**

The Massachusetts Strategic Plan for Recycling Market Development highlighted several opportunities to convert from manufacturing with primary (virgin) materials to using secondary (scrap) materials such as plastics, glass, tires, textiles, and paper. The Chelsea Center hired the firm DSM to look at opportunities for plastics and Boisson & Associates to look at the remaining materials.

The Boisson report looks at ten feedstock conversion opportunities. Top priority recommendations are for the use of tire shreds or chips in civil engineering applications and the use of mixed-color container glass in abrasives and other ground glass applications. Medium priority recommendations include the use of mixed wastepaper by board, tissue and corrugating medium mills; the use of scrap textile shoddy by nonwoven textile producers; the use of crumb rubber in molded product applications; and the use of crumb rubber in rubber/thermoplastic blends.

For more information on the Boisson report, see Technical Report #28 on our web site. We hope to work with manufacturers to follow through on some of these recommendations, as well as those from the upcoming DSM plastics report, later this year.

## **REPORTS ON COMMUNITY ECONOMIC DEVELOPMENT PROJECTS COMING SOON**

Reports from the first round of Community Economic Development Through Recycling grants will be on our web site in early December:

- Remanufacturing Enterprise for Boston
- City of Taunton Recycling-Based Community Economic Development Plan
- Materials Flow Through the Community - Creating New Resource Opportunities in Adams and North Adams
- Chinatown Waste Reduction Initiative

## **FINANCE SEMINAR A SUCCESS**

On September 26, we sponsored a workshop in Westboro to educate the finance community about the recycling industry. Thirty people attended, representing a range of public finance agencies, banks, and individual companies. The workshop was presented by Mary Ann Remolador of the Northeast Recycling Council and Tom Kancandes of TKM Materials, LLC. Both Mary Ann and Tom have backgrounds in business assistance, recycling, and the needs of the recycling industry, and did an excellent job developing the curriculum and presenting the information. This workshop was sponsored in part by U.S. EPA, Region I.

## **MANUFACTURING OPPORTUNITY: GUARDRAIL OFFSET BLOCKS**

We have been working with the MassHighway Department to identify new recycled products that can be made by Massachusetts manufacturers for use in highway applications. One such product is guardrail offset blocks, which are the blocks located between the guardrails and the posts that hold them up on highways. Massachusetts offset blocks are currently made of wood or steel, but the use of recycled plastic offset blocks by highway departments is growing across the country. Our new Technical Report #27 compares the life cycles of plastic, metal, and wood offset blocks. If you are interested in manufacturing offset blocks or learning more about them, contact Jodie Siegel at the Chelsea Center.

## **2000 MASSACHUSETTS GUIDE TO SERVICES FOR THE RECYCLING INDUSTRY**

We have updated our popular Guide to Services for the Recycling Industry. The new version profiles 60 organizations that provide services such as financing, technical assistance, facility siting, product procurement, business plan review, export help, and more. The guide also lists publications and other resources for recycling, business development, technology development, procurement and material exchanges. The guide is a great resource for new and expanding businesses working on all aspects of recycling, particularly manufacturing, and for other technical, financial, and economic development service providers. The organizations listed in the directory include state and federal agencies, public and private universities, colleges and community colleges, and not-for-profit entities that cover a large region of or the whole state. Copies are free of charge to Massachusetts businesses and are \$10 for out-of-state requests.

## **TECHNICAL REPORTS RELEASED**

Fourteen new technical reports on research sponsored by the Chelsea Center have been released since our last newsletter. They are:

- #17: Recycling and Reuse of Mixed-Fiber Fabric Remnants (Spandex, Cotton & Polyester)
- #18: Development of Novel Applications for Using Recycled Rubber in Thermoplastics
- #19: An Investigation of the Potential to Expand the Manufacture of Recycled Wood-Plastic Composite Products in Massachusetts
- #20: Recycling Market Development for Engineering Thermoplastics from Used Electronic Equipment
- #21: Recycling Market Development for Engineering Thermoplastics from Used Electronic Equipment - Summary Report of the Stakeholder Dialogue Meetings on May 10, 1999 and June 22, 1999
- #22: Development of New Colors and Style for Recycled Polypropylene Toothbrushes
- #23: Material Preparation and Process Improvements for Recycled HDPE Scuff Board.

*continued on page 5*

## NEWS FROM AROUND THE STATE

### DEP REVISES SOLID WASTE MASTER PLAN

The Department of Environmental Protection (DEP) is sorting through more than 100 sets of comments received on its June 2000 draft of its revised Solid Waste Master Plan (SWMP). The draft plan sets milestones through the year 2010, including a 70% waste reduction goal.

The plan also includes new waste reduction strategies to meet the goal, including more emphasis on materials such as construction and demolition waste. Key approaches in the plan are product stewardship, where the state would work with manufacturers to develop action plans for various products, and “recycling benefits plans” that would require the waste industry to develop waste reduction plans in order to operate waste facilities in the state. Even if the 70% goal is met, DEP believes additional disposal capacity will be required to meet the goal of no net imports/exports of garbage for the Commonwealth.

The plan’s overall vision and emphasis on source reduction, sustainability, and new strategies to work with manufacturers and the waste industry were generally supported, according to DEP’s Glenn Keith. But many of those commenting on the DEP plan opposed the creation of additional disposal capacity. In its comments to DEP, the Chelsea Center urged the inclusion of more market development programs. DEP plans to issue a document responding to comments and the final SWMP before the end of the year.

### RECYCLING INDUSTRIES REIMBURSEMENT CREDIT

DEP plans to issue a Request for Responses (RFR) for the Recycling Industries Reimbursement Credit (RIRC) program by the end of the year. The RIRC program provides companies with grants up to \$50,000 for capital equipment and research and development to increase their processing or use of recycled materials.

DEP selects an annual list of eligible recyclable materials and recycled feedstocks. The agency is currently promulgating regulations to formalize the process for selecting which materials to emphasize in a given year. The process has typically included an informal market survey and review of the agency’s policy priorities. The new regulations would make that process more formal. Watch the DEP web site at [www.state.ma.us/dep](http://www.state.ma.us/dep) for more information.

### MASSBUSINESS CLOSES MORE RECYCLING LOANS

The Massachusetts Business Development Corporation (MassBusiness) has assisted three more recycling businesses through its Recycling Loan Fund. Product Takeback Services, an electronics recycling firm in Billerica, received a loan for equipment and working capital. Hanna Paper Recycling, Inc. in Mansfield received financing to assist with moving costs and leasehold improvements. SelecTech, a recycled plastics manufacturer, has received a second loan from MassBusiness for additional equipment for their Taunton facility. To date, MassBusiness has awarded eighteen loans, totaling nearly \$3 million and leveraging about \$9 million in public and private sector financing. To learn more about the RLF’s eligibility requirements and services, contact Karen Michalski of MassBusiness at (617) 350-8877 or visit [www.mass-business.com](http://www.mass-business.com).

### NEW REPORT ON COST-EFFECTIVENESS OF RECYCLING

The Executive Office of Environmental Affairs (EOEA) sponsored an economic study of recycling in the Commonwealth that found that the majority of recycling programs in the Commonwealth are cost-effective. Specifically,

- 70% of the municipalities have cost-effective recycling programs;
- 70% of the state’s 6 million residents are served by cost-effective recycling programs;
- 93% of the communities have cost-effective yard waste programs; and
- Cost-effective yard waste programs cover 90% of the state’s residents.

The report also outlines ways to improve programs that are not currently cost-effective. Scott Cassel of the EOEA says that the study clearly shows that recycling can save most communities money. The results, he says, support the state’s efforts to strengthen measures to increase recycling in communities without adequate recycling programs. For more information, contact Scott Cassel at [scott.cassel@state.ma.us](mailto:scott.cassel@state.ma.us) or (617) 626-1048.

### MASSRECYCLE HIRES NEW DIRECTOR

MassRecycle welcomes a new executive director. Jenny Gitlitz joined MassRecycle in August. She has worked on recycling issues in the nonprofit, municipal, and academic sectors for 15 years and looks forward to increasing networking among municipalities and advocating for recycling in the Commonwealth.

#### *Technical Reports Released, continued from page 4*

- #24: Development of a Class I Fire Rated Industrial Resilient Floor Tile Made from Post-Consumer Carpet Waste
- #25: Compounding and Testing of Recovered Colored Polypropylene for the Preserve® Toothbrush
- #26: Evaluation of Use of Manufactured Waste Asphalt Shingles in Hot Mix Asphalt
- #27: Life Cycle Assessment Study Guardrail Offset Blocks: Recycled Plastic, Steel and Pressure-Treated Wood Blocks
- #28: Feedstock Conversion Strategies
- #29: Material Testing of Recycled Plastic Landscaping
- #30: Recycled HDPE Landscape Timber Retaining Wall Investigation

All reports are available free of charge to businesses, individuals, and governments in Massachusetts, and are \$10 each for out-of-state requests. The reports are also available in PDF format on our web site, under “Publications.”

## THANK YOU, EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

Most of the funding for the Chelsea Center's programs comes from the Executive Office of Environmental Affairs (EDEA) through the Clean Environment Fund (CEF), which is comprised of unredeemed bottle deposits. Due to increased earmarks on the CEF budget and increased demand for CEF funds, EDEA has had to reduce the amount of funds provided to the Chelsea Center. We appreciate EDEA's continued support of our programs during this tight budget time.

### NAME THIS NEWSLETTER!

The Chelsea Center is looking for a creative name for this newsletter that is relevant to our mission and/or our programs. Submit your entry to [amyp@chelseacenter.org](mailto:amyp@chelseacenter.org) no later than December 31, 2000 and the winner will receive a recycled product made in Massachusetts.

### WORKSHOP ON USES FOR SCRAP TIRES COMING SOON.

The Chelsea Center is sponsoring a workshop on civil engineering uses of scrap tires. The date is yet to be determined. Please keep an eye on our web page for the date and location.

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