

# CHELSEA CENTER FOR RECYCLING AND ECONOMIC DEVELOPMENT

## Newsletter

Winter/Spring 99

### MANUFACTURER PROFILE

#### SELECTECH

What is unique about a plastics manufacturer who produces products like floor mats, planters and timber? The uniqueness of SelecTech of Taunton, MA lies in their ability to use recycled plastics that few others are able to handle, and an injection molding process to make products that are typically extruded. SelecTech prides itself on its ability to solve a materials problem while making a good product at a low cost.

SelecTech's mission is to "create and market valuable, innovative products from otherwise unusable waste plastics, using unique low cost technologies. By doing this, SelecTech provides:

- Value to the customer with high quality, competitively priced products;
- Value to the waste generator as a viable, preferred outlet for waste;
- Value to the environment with a sustainable alternative to disposal;
- Value to the employees with a quality worklife and;
- Value to the shareholders through sustained profitability and positive cash flow."

Although SelecTech is a recycling business, they don't look at themselves as such. They firmly believe that in order to compete, their product must be as good if not better than those made from virgin materials.

SelecTech uses a variety of recovered materials, including polyethylenes, wire strippings, carpet, and flexible vinyl, some with contaminants. In making their injection-molded products, they blend these with other materials that are generally not considered compatible with each other. SelecTech targets both mass retail and industrial products markets.

SelecTech started as an idea in 1995, when two of its three founders were working together for another company on recycling issues. They saw that recycling of "contaminated" materials was not so much a problem as an opportunity. They worked for six months to develop the business plan and then "started dialing for dollars," according to Michael King, the Vice President of Business Development. The company has grown rapidly since: from 20 employees with sales at \$720,000 in 1997 to 40 employees and sales of over \$1 million at the end of 1998.

It was difficult for SelecTech to find an organization that would take the lead on financing their company, and it took them one and a half years to get their financing. Ultimately venture capitalists committed to the project, and then the Massachusetts Technology

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### STRATEGIC PLAN

The Chelsea Center for Recycling and Economic Development has been designated by the Executive Office of Environmental Affairs to develop a *Strategic Plan for the Use of Recyclable Materials for Massachusetts*. This Plan was called for by the legislature in its fiscal year 1998 budget. The Plan evaluates glass, plastics, metal, paper, wood, organics, textiles and tires.

The firm of Dorn and Associates, based in Apex, North Carolina, was hired to develop the Plan. Dorn and Associates worked with an Advisory Committee comprised of representatives from the Department of Environmental Protection, the Executive Office of Environmental Affairs, the Massachusetts Manufacturing Partnership, Massachusetts Office of Business Development, MassHighway, MassRecycle, the University of Massachusetts President's Office, the U.S. Environmental Protection Agency and WasteCap.

The Plan was developed in three phases. Phase I involved assessing the current and projected supply and demand for the target materials listed above. The eight target materials were broken down into 37 commodity grades that reflect the marketplace for recyclables. The purpose of Phase I was to identify specific recyclable commodities for which there seem to be opportunities for increasing demand in-state. Information to determine this was obtained through a number of sources for 1996 and projected for 2001.

After evaluating the supply-demand balance for each material grade, a determination was made regarding which grades have high recycling market development need and potential and should be addressed in Phase II. Material grades were selected if they: offered significant potential for additional tonnage diversion from disposal; had barriers to diversion with respect to processing or end use (thus allowing for stimulation of additional demand);

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## THE YEAR IN REVIEW

June 30 marked the end of the Chelsea Center's 1998 fiscal year, during which time we received a significant increase in funding. These funds came from the Clean Environment Fund, comprised of unredeamed deposits from the bottle bill. This allowed us to increase the services and assistance we provide to manufacturers and other service providers. Last year's accomplishments included:

- Laying the groundwork for the development of a strategic plan for recycling market development, including convening a forum of eighty stakeholders who provided input into market development options;
- Testing recycled plastic applications for three manufacturers;
- Providing ten interns to six companies and public agencies to assist with marketing, research and testing;
- Assisting manufacturers in marketing through our database of Massachusetts manufacturers;
- Identifying barriers to the use of secondary paper by Massachusetts paper mills;
- Providing independent testing of three new recycled products for two manufacturers;
- Providing grants to enable six companies to exhibit at the New England EnviroExpo;
- Holding workshops on best practices for recycled plastics, alternatives for recycled glass, and civil engineering uses of rubber, attracting close to eighty attendees;
- Holding a forum with DEP and manufacturers regarding the impacts of Beneficial Use Determinations;
- Publishing our newsletter and distributing it to close to 5,000 stakeholders;
- Updating our Directory of Recycled Products Manufacturers;
- Conducting six research projects with three UMass campuses and private consultants on processing of clam wastes, recovering fibers from fabric remnants, the BUD process and foundry sand, electronics recycling, rubber as a light fill material, and properties of white pigmented plastic milk bottles;

- Working with the Northeast Recycling Council to start analyzing the economic impacts of the recycling industry in the region;
- Conducting research necessary to revisit the Newspaper Publishers Agreement for use of recycled newsprint, to which Massachusetts is a party; and
- Developing a draft plan to promote Community Economic Development through recycling.

With continued funding this fiscal year, we have been able to build on this success. The Chelsea Center thanks the Legislature, the Executive Office of Environmental Affairs, and the Department of Environmental Protection for their support.

## THE CHELSEA CENTER FOR RECYCLING AND ECONOMIC DEVELOPMENT

The Chelsea Center for Recycling and Economic Development was launched by the Commonwealth of Massachusetts in 1995 to create jobs, support recycling efforts, and help the economy and the environment by working to increase the use of recovered materials in manufacturing processes throughout the state. The Chelsea Center provides a range of technical and business services to manufacturers who use, or are interested in using, recovered materials, and works closely with other public and not-for-profit entities in the state to pursue common goals. The Center is part of the University of Massachusetts, Lowell.

### WHO IS THE CHELSEA CENTER?

Amy Perlmutter, Executive Director

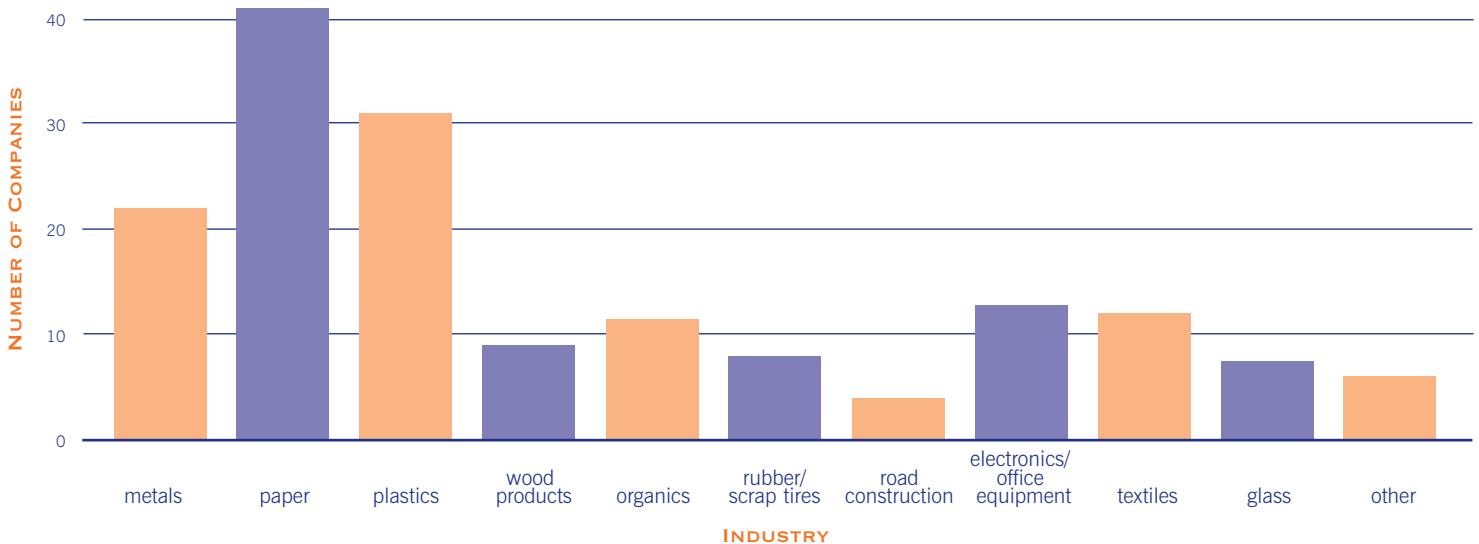
Gail Harris, Director of Business Programs

Jodie Siegel, Director of Technical Programs

The Chelsea Center says good-bye to James Doherty who has served as our Administrative Manager, and thanks him for his work in support of the Chelsea Center.

## MASSACHUSETTS RECYCLED PRODUCTS MANUFACTURERS

SOURCE: 1999 DIRECTORY OF MASSACHUSETTS RECYCLED PRODUCTS MANUFACTURERS, CHELSEA CENTER FOR RECYCLING AND ECONOMIC DEVELOPMENT



## OPPORTUNITIES

### REQUEST FOR RESPONSES FOR PRODUCT AND MATERIAL TESTING AND NEW PRODUCT DEVELOPMENT

The Chelsea Center can provide limited funds for these activities for manufacturers using, or interested in using, recovered feedstocks:

- Grants are available up to \$5,000 for testing services to implement or improve a manufacturer's use of recovered materials.
- Grants are available up to \$8,000 for manufacturers seeking to develop new products or refine existing ones using recovered feedstocks.

The deadline for applications is March 15. However, additional solicitations will occur in the future, pending availability of funding.

Projects receiving funding from a previous solicitation this year include: testing of pre- and post-consumer paperboard made from plastic coated paper; testing a new paving patch material that utilizes fly ash; explosivity testing of powdered rubber made from tires; and color testing of recycled polypropylene for use in toothbrush handles. New product development projects include assisting in the development of a process to manufacture floor tiles from old vinyl carpet, development of a cold patch paving material using mixed plastics, and development of plastic "scuff boards" for truck beds.

For more information, contact Jodie Siegel at 617-884-4324 or [jodies@chelseacenter.org](mailto:jodies@chelseacenter.org).

### INTERNSHIPS

The Chelsea Center continues its successful ReTern (Recycling Intern) program, placing students from colleges and universities with Massachusetts recycled product manufacturers. Intern projects this year include performing a cost-benefit analysis and market research for a recycled content adhesive for Osmos International; and market research, production development planning, and design of a public relations campaign for Recycline of Somerville.

Manufacturers and students are urged to contact Gail Harris at 617-884-6237 or [gailh@chelseacenter.org](mailto:gailh@chelseacenter.org) to find out how to become involved in this project.

### TRADE SHOW GRANTS

This year the Chelsea Center was able to expand its grant program for manufacturers to exhibit at trade shows and exhibitions. Grants are available for up to 50% of the exhibition cost, not to exceed \$500/year per manufacturer. Trade shows include the recycled products vendor fair sponsored by the State's Operational Services Division, Build Boston, and the New England EnviroExpo. Funds are still available for the EnviroExpo, which will be held this coming May. If you would like to find out more about the trade show grants, or suggest other trade shows for consideration, contact Gail Harris at 617-884-6237 or [gailh@chelseacenter.org](mailto:gailh@chelseacenter.org).

### UNIVERSITY RESEARCH AND DEVELOPMENT

A Request for Responses has just been released for public and private research institutions to do technical research that will lead to increased demand for secondary materials in Massachusetts. Grants are available for up to \$50,000 per project. The deadline for applications is April 19, 1999. Proposals will be selected in May for

work to begin in the late summer or early fall. Applications must come from research institutions. However, companies interested in partnering with researchers should contact the Chelsea Center for a list of researchers and subject areas. Research underway this fiscal year includes:

- *Improving the Economic and Environmental Aspects of Electronics Recycling*, Tufts University
- *Development of Novel Applications of EVA Crosslinked Scrap in Thermoplastics*, UMass Lowell
- *An Expansion of the Potential for Expanding the Manufacture of Wood-Plastic Composite Products in Massachusetts from Recycled Materials*, Mt. Wachusett Community College
- *Feasibility of On-Site Processing of Clam Bellies as Fish Feed*, UMass Dartmouth (continued from FY 98)
- *Recycling and Reuse of Mixed Fiber Fabric Remnants*, UMass Dartmouth (continued from FY 98)

For more information, contact Jodie Siegel at 617-884-4324 or [jodies@chelseacenter.org](mailto:jodies@chelseacenter.org).

### COMMUNITY ECONOMIC DEVELOPMENT THROUGH RECYCLING

The Chelsea Center announces the availability of a new grant program to encourage local governments and not-for-profits to take advantage of the waste materials generated in their communities. Grants are available for up to \$25,000 for such projects as assessing outputs and inputs generated and used in the community and developing a way to increase linkages; starting up or converting existing companies based on locally generated recyclable feedstocks; and developing a public input process to determine the types of recycled products manufacturers to attract, and/or to help overcome negative attitudes between existing companies and the community. Grants may be awarded to a municipality or a community based organization. The deadline for applications is May 4. It is anticipated that 2-5 projects will be funded for implementation next fiscal year, depending on availability of Chelsea Center funds. For more information, contact Amy Perlmutter at 617-884-4376 or [amyp@chelseacenter.org](mailto:amyp@chelseacenter.org).

### PILOT PURCHASE

The Chelsea Center is again working with the State's Operational Services Division to identify and purchase recycled products made in Massachusetts for use by public entities throughout the state. Products will be selected and bid this spring for purchase and delivery prior to June 30, 1999. If you make a recycled product that you think the state could use, contact Gail Harris at 617-884-6237 or [gailh@chelseacenter.org](mailto:gailh@chelseacenter.org).

### VENTURE FORUM

The Chelsea Center is co-sponsoring the Fourth Annual Northeast Recycling Investment Forum, organized by the Northeast Recycling Council. The Forum will be held May 5 in conjunction with the New England EnviroExpo in Boston. The Forum's purpose is to link investors with recycling companies using proprietary or patented technologies who are seeking \$100,000 to \$5 million in equity capital for their new or expanding business. To apply to present

your company at the Forum, or if you are an investor interested in attending, contact Mary Ann Remolador at the Northeast Recycling Council, 802-254-3636 or through NERC's web site at [www.nerc.org](http://www.nerc.org). The Executive Office of Environmental Affairs is also a co-sponsor of this event.

## UPCOMING WORKSHOPS

### FOSTERING ECONOMIC DEVELOPMENT THROUGH RECYCLING

The Chelsea Center sponsored two workshops geared towards informing the economic development and finance communities about the recycling industry. The first workshop was held on March 2 in Boston, and the second workshop was on March 4 in Springfield. The workshops were half a day, and featured a video about recycling in Massachusetts, case studies from recycling companies, and information about financing needs of recycling businesses. The Chelsea Center would be happy to bring this workshop to your community, provided you can get 10 interested people, including recycling coordinators, local economic development officials and bankers, together in one place. All workshops must be completed prior to July 31, 1999, and a limited number are available. To find out more or to schedule a workshop, contact Gail Harris at 617-884-6237 or [gailh@chelseacenter.org](mailto:gailh@chelseacenter.org). Funding for these workshops is from the U.S. Environmental Protection Agency, New England Region.

### BENEFICIAL USE DETERMINATION

Massachusetts requires some generators of waste materials to obtain a Beneficial Use Determination (BUD) prior to using these materials in new products rather than disposing of them. The Chelsea Center is co-sponsoring a workshop with MassRecycle on March 16 at the Royal Plaza Hotel and Trade Center in Marlboro. The purpose of the workshop is to inform generators and users about the Beneficial Use Determination process. This workshop is essential for any company generating, or interested in using, a potentially recoverable waste material. For more information or to register, contact MassRecycle at 627-338-0244.

## PUBLICATIONS

All reports and publications are available by contacting The Chelsea Center at 617-887-2300 or [info@chelseacenter.org](mailto:info@chelseacenter.org). Some reports are already on our web site, and we expect to have them all there in the near future.

### DIRECTORY OF RECYCLED PRODUCTS MANUFACTURERS 1999 UPDATE

The Chelsea Center has updated its Directory of Recycled Products Manufacturers. The new Directory identifies over 170 companies in Massachusetts that manufacture new products with recovered materials. These companies use over 3 million tons of recycled materials annually, and employ over 12,000 people. In addition, they are responsible for an estimated 12,000 support jobs downstream and upstream of production. The Directory will be distributed widely to help market these companies, and illustrate the benefit to the Massachusetts economy of this kind of activity.

## GUIDE TO SERVICES FOR THE RECYCLING INDUSTRY

This directory of providers of business and technical services is being updated and expanded and will be available in early March.

## TECHNICAL REPORTS

The Chelsea Center makes the results of its research available through technical reports. Reports currently, or soon to be, available are:

- #1 *A Study on the Recycling of White, Natural, and Mixed Color HDPE Bottles, 1998*, Researcher: Robert Malloy, Department of Plastics Engineering, University of Massachusetts Lowell
- #2 *Environmental Impacts of Recycled Rubber in Light Fill Applications: Summary & Evaluation of Existing Literature, 1998*. Researchers: Helen Liu, Joey Mead, Ross Stacer, Department of Plastics Engineering, University of Massachusetts Lowell
- #3 *Feasibility Study: Use of Discarded LDPE Shrink Wrap from Boatyards as an Injection Molding Feedstock, 1998*. Researchers: Robert D. Vernon, Southeastern Massachusetts Manufacturing Partnership and James M. Baker, Advanced Corporate Technology
- #4 *Papermill Recovered Waste Paper Survey*. Researcher: Gary W. Diadone, Merrimack Valley Manufacturing Partnership (not yet available)

Electronics Processing and Marketing Research Project, Reports #5-7.

- #5 *Electronics Recycling Vendor Survey, 1998*, Researcher: William Waters, Product Takeback Services
- #6 *Potential Markets for CRTs and Plastics from Electronics Demanufacturing: An Initial Scoping Report, 1998*, Researcher: Patricia Dillon, Dillon Environmental Associates
- #7 *Scrap Electronics Processing, 1998*, Researcher: John Pepi, Office of Waste Management, University of Massachusetts Amherst
- #8 *A Survey of Foundry Participation in the Massachusetts Beneficial Use Determination Process, UMass Amherst Department of Mechanical and Industrial Engineering, Center for Energy Efficiency and Renewable Energy*. Researchers: Tom Genovese, Ian Roth, Beka Kosanovic, and Eric Winkler. (not yet available)

For more information on other available research, contact Jodie Siegel at 617-884-4324 or [jodies@chelseacenter.org](mailto:jodies@chelseacenter.org).

## OTHER NEWS

### PAPER MILL DEMONSTRATIONS

The Chelsea Center contracted with Gary Diadone of the Merrimack Valley Manufacturing Partnership last fiscal year to survey paper mills in order to identify barriers to their increased use of recovered materials. As a result of this work, two pilot projects were identified that are being implemented that could lead to the increased use of recovered paper in Massachusetts:

Erving Paper Mills just finished evaluating the installation of a new piece of equipment for improved fiber dispersion, which would increase their ability to use a lower grade waste paper and increase first pass fiber retention.

Creative Paper, Inc. will automate their present pulper reject dumping procedure and research specific equipment systems capable of filtering and screening out contaminants more efficiently.

### Manufacturer Profile continued from page 1

Development Corporation (MTDC) and Massachusetts Community Development Finance Corporation (MCDFC) followed. They found their way to MTDC through the Massachusetts Office of Business Development (MOBD). Mr. King said of working with the public sector, "There was no road map. We had to do it all ourselves. It was like pulling on a string, we just had to keep pulling and pulling."



(left to right) SelecTech's Chuck Dwyer, Tom Ricciardelli, and Michael King with some of their products.

The challenge faced by SelecTech, now that they have learned their capabilities, is to focus on a particular market segment and develop their product line. They are currently in the midst of a strategic planning process that will serve as a roadmap for them.

SelecTech approached the Chelsea Center to investigate types of assistance the Center can provide. The Chelsea Center contacted the US Postal Service and the UMass campuses for potential demonstration sites for SelecTech's new landscape timbers. The US Postal Service is installing these at their Springfield warehouse in three different areas that will function as both a test site for SelecTech and help the post office with their landscaping. Bob Huang, Environmental and Energy Technology Development Officer at UMass, has also identified test sites on several campuses. Faculty and students on the campuses will design, build, and field test retaining wall structures using SelecTech's new timbers. Lab tests will be done to determine resistance to ultraviolet light and strength. Once the tests are complete, the Chelsea Center expects this information will assist SelecTech in developing specifications to market this product.

### Strategic Plan continued from page 1

had unrealized market potential; and offered the feasibility of state entities to work within the existing infrastructure to stimulate demand.

Based on these criteria and discussions with the Advisory Committee, the following eight materials, consisting of sixteen grades, were selected for further study in Phase II:

**Glass:** Mixed Glass Containers; Other (non-container) Glass

**Paper:** Mixed Paper; High Grades

**Wood:** Pallets and Shipping Containers; Tree Residues; Construction and Demolition Waste

**Organics:** Food Waste

**Textiles:** Used Clothing; Carpets

**Tires:** Newly generated Scrap Tires; Old Scrap Tires

**Plastics:** Low Density Polyethylene (non-film); Polypropylene; Film; Mixed Plastic Bottles; Containers (#3-7)

Before conducting the assessment of each material grade, the Advisory Committee hosted a Stakeholder Forum to obtain input regarding market development options from a variety of people involved in collection, processing, and end-use of the targeted materials. Close to eighty people attended the Forum and provided input. Information from this event, as well as discussions with government and industry leaders, helped the consulting team identify a range of recycling market development opportunities.

Phase II of the project assessed market development opportunities for each of the material grades listed above and includes:

- A description of the material and nature of supply;
- Identification of products and applications that can be produced using the recovered material;

- A discussion of the current market situation for material recovered in Massachusetts, including the role of key in-state processors and end users;
- A determination regarding potential for increased production in-state for each of the major products and applications; and
- An in-depth discussion of the nature of the market development opportunity, the possible waste diversion and economic benefits, and challenges to realizing the opportunity.

On the basis of this assessment, eighteen market development opportunities are identified that fit into the following major categories: *Recycling Business Development* (the start-up, attraction, or expansion of firms making recycled products); *Feedstock Conversion* (substitution of the target secondary material as feedstock for another material); *Research and Development* (investment in the development of innovative products that appear to have the potential for market success); and *Increase in Processing Capacity* (investment in capacity to add value to secondary materials through increased processing). Challenges to realizing each opportunity were also identified.

Information from the Phase I and II reports was used to develop the actual Strategic Plan, which is Phase III of the project. Phase III discusses both materials-specific market development opportunities and an overall approach for recycling market development for Massachusetts. Recommendations include creation of a network of recycled product manufacturers, methodology for keeping up with changing markets, and ways to attract and promote recycling businesses. The Strategic Plan will be a living document that will lay out the recommended programs and relationships between state recycling market development players.

The Strategic Plan Advisory Committee will be holding an informational meeting about the Plan in the spring. For a copy of either phase of the report, contact the Chelsea Center at 617-887-2300. You can also check the Chelsea Center's web page for updates at <http://www.chelseacenter.org>.

## RECYCLING INDUSTRIES REIMBURSEMENT CREDIT

The Department of Environmental Protection launched its new Recycling Industries Reimbursement Credit (RIRC) this year. RIRC provides companies with incentives worth up to \$50,000 to establish or increase processing or use of recycled feedstock. RIRC is intended to make recycled feedstocks more competitive with their virgin counterparts. This year, RIRC targeted carpet, electronics, mercury-bearing waste, mixed color glass cullet, mixed paper, mixed #3-7 plastics, paper, aseptic cartons, paint and tires. RIRC funding can be used to: reduce the cost of utilizing recycled materials for processors and manufacturers; partially fund capital equipment and fund research and development costs, or lower the interest rate on loans; or share the costs of government purchases of recycled products.

Ten companies were selected for funding this fiscal year: *The Center for Ecological Technology*: to improve its on-farm composting program; *Conigliaro Industries*: to help fund new equipment to manufacture a cold-patch pot-hole filler utilizing over 5,000 tons per year of recycled plastics; *Container Recycling Alliance*: to help purchase new equipment to process an additional 12,500 tons of mixed glass; *Creative Paper*: to rebuild machinery to increase its processing of mixed paper by over 12,000 tons per year; *Erickson*

*Materials*: to purchase equipment to increase its processing of tires by over 1,000 tons per year and reduce equipment leasing costs; *Global Recycling Technologies*: to add equipment to increase its processing of computer and electronic equipment by separating leaded and non-leaded CRT's; *New Horizon/Sirius Pulp and Paper*: to conduct an engineering study to reopen an idled paper mill that could process an estimated 45,000 tons of paper; *Paint Solutions*: to purchase equipment to process and manufacture 30,000 gallons of recycled paint per year; *Perkit Folding Box*: to upgrade its existing paperboard making equipment to increase its throughput of post consumer mixed paper; and *SelecTech*: to purchase equipment to increase its use of post-consumer carpets and mixed plastics.

For more information on RIRC, contact Steve Long at the Department of Environmental Protection, 617-292-5734.

## WWW.CHELSEACENTER.ORG

The Chelsea Center's new web site is up and running. The site includes information about the Center and its services, provides information and links to other providers of business and technical services, news and updates, publications information, and classifieds. The site is constantly evolving, so check it often!

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