


CHELSEA CENTER FOR RECYCLING AND ECONOMIC DEVELOPMENT

UNIVERSITY OF MASSACHUSETTS

RBED Report

A Feasibility Analysis for the Expansion of Corex, Inc. – Phase II

August 2002

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A Feasibility Analysis for the Expansion of Corex, Inc.

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Chelsea Center for Recycling and Economic Development Community Economic Development through Recycling Program

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The Chelsea Center for Recycling and Economic Development, a part of the University of Massachusetts' Lowell Center for Sustainable Production, was created by the Commonwealth of Massachusetts in 1995 to create jobs, support recycling efforts, and help the economy and the environment by increasing the use of recyclables by manufacturers. The mission of the Chelsea Center is to develop an infrastructure for a sustainable materials economy in Massachusetts, where businesses will thrive that rely on locally discarded goods as their feedstock and that minimize pressure on the environment by reducing waste, pollution, dependence on virgin materials, and dependence on disposal facilities. Further information can be obtained by contacting the Chelsea Center for Recycling and Economic Development, 80 Everett Avenue, Suite 221, Chelsea, MA 02150, 617-887-2300.

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Introduction

This report is the conclusion to the Recycling Based Economic Development (RBED) Phase II project, which originated from the 2001 Springfield Eco-Industrial Baseline Study¹. The Eco-Industrial Baseline study includes an examination of new end uses for commercial and industrial waste products generated by businesses in the City of Springfield. For example, instead of sending waste wood to the landfill, it could be used as a feedstock for an existing or new manufacturing process. The ultimate goal, as stated in the Baseline Study report, is to reduce the cost of doing business in the city by reducing a business's cost for waste disposal. The benefits of this will be less waste sent to the landfill, cheaper feedstock for manufacturers and subsequently, a better rate of business retention and new job creation in Springfield and in the region.

The purpose of the RBED Phase II study is to apply these concepts to a real life example. After participating in the Phase I study, Corex Products, Inc., an existing recycling-based business, came through as a perfect candidate for participation in our first case study. New Ecology Inc. ("NEI"), a Cambridge-based environmental economic consulting firm, was hired to research the feasibility of Corex's expansion into on-site production of wood flour, the primary input to their manufacturing process, from local waste wood feed stocks. The scope of this work is two-fold: 1) identify new local and regional waste products that can be used in Corex's manufacturing process, and 2) explore the feasibility of processing wood flour on site. In addition to this scope of work (see Appendix A for a detailed scope of services), we have researched other issues, including on-site assembly and marketing of Corex's products.

Founded in 1966, Corex Products, Inc. provides the highest quality hard plastic components for the school furniture industry; desk tops (rectangular & tablet), contoured seats and backs (4 matching combinations), and stool tops (2 sizes). Across the country and in our region, efforts are being made to protect our natural environment. Corex's mission is to manufacture products from recycled plastic and wood waste and to produce wood-like products superior to natural wood. By grinding local waste wood into wood flour, mixing the flour with melamine resin, and then heating this mixture in molds under high pressure, the people who own and manage Corex Products, Inc. hope their efforts can help to stop the unnecessary cutting of forests, while making superior furniture products.

NEI is a non-profit environmental organization that promotes economic development in distressed urban communities throughout New England. NEI uses law, planning, and advocacy to help community organizations, environmental groups, municipalities, and businesses

¹ Springfield Eco-Industrial Baseline Study, May 2001, Presented by the City of Springfield, Department of Planning and the Work & Environmental Initiative, Cornell University.

implement development projects that are economically viable and socially and environmentally responsible.

This project was supported by the City of Springfield Department of Planning, Springfield Office of Economic Development, and by a grant from the Chelsea Center for Recycling and Economic Development. The Chelsea Center is part of the University of Massachusetts and funding for their grant program comes from the Executive Office of Environmental Affairs and the Clean Environment Fund, which is comprised of unredeemed bottle deposits.

Methodology

The primary purpose of this study was to assess whether it is feasible and desirable for Corex to purchase a grinder that can produce their primary feedstock, wood flour, on site. The research conducted for this study consisted of an inventory of Corex's current and potential feedstock, i.e. waste wood, available within a 25 mile radius of the company's plant located on Cottage Street in Springfield. NEI researched the availability of waste school furniture, including Corex's own product, which can be ground up and used again as an input, secondary wood manufacturers², and other businesses whose waste included hardwood.

School Furniture Research: We contacted 62 school districts by mail and 19 school districts responded to our survey after some phone and email follow-up. Questions included:

1. Does your school district have school furniture that is broken, outgrown or discontinued?
If Yes, can you estimate approximately how much (tons, number of chairs, desks, etc.)?
2. What type of material does the school furniture contain?
3. What is done with broken, outgrown and discontinued school furniture:
 - If you dispose of it, what are the costs for transportation and disposal/dump fees?
 - If you store it, do you pay for storage? What is the long-term plan for the stored furniture?
 - If you have the school furniture recycled, what parts are recycled and are there any costs associated with the recycling?
4. If you had opportunity to have, or have more of your school furniture recycled, would you take advantage of it?

Waste Wood Research: For this portion of the project, NEI contacted secondary wood manufacturers and recycling companies. A primary source for this information is a website

² Secondary wood manufacturers "include firms that do not primarily harvest timber or produce lumber. The firms typically use precut lumber to manufacture products or components." Source: [A Literature-based Estimate of Woody Biomass Supply in Massachusetts](#), Draft Final Report, by Supply Subcommittee, Massachusetts Biomass Energy Working Group, Nov. 21, 2001 last revision.

hosted by the Center for Ecological Technology called www.materialsexchange.org where waste materials from participating businesses are inventoried and listed along with the feedstock needs of other businesses. The purpose of the site is to maximize the potential input-output exchanges that are possible between businesses. For each identified waste wood source listed on the site, we inquired about the frequency, type, source, condition, current use/disposal of the waste wood, and the cost to purchase the waste wood if there was one.

Other Research: Through our discussions with industry experts, government officials, applicable websites and literature, we discovered that a few important reports listing waste wood sources have been completed. These reports were encouraging, especially the one from the Forest and Wood Products Institute at Mount Wachusett Community College.³ This report's 1999 estimate confirmed that statewide there are 225,000 tons of woody residue available from secondary manufacturers annually. The woody residue is composed of sawdust, sander dust, wood chips, shavings, wood flour, rippings, cut-offs, and ends. Ninety-eight percent of the residue is recovered for use by other users. Secondary manufacturer woody residue is likely to be Corex's primary feedstock should the firm decide to grind and produce wood flour on-site.

Project Findings & Conclusions

Findings: The following section outlines our findings on the primary two aspects of this research:

1. availability of feedstock, i.e. waste hardwood; and
2. financial feasibility of purchasing a grinder to produce wood flour on site at the current Corex plant.

Currently Corex purchases wood flour in 50 pound bags from a company in Lowell, Massachusetts and pays about ten cents per pound (\$.10/lb.), including transportation, and uses about 88,000 pounds (44 tons) per week for manufacturing their furniture components. Since this demand is less than the amount of feedstock available in the area, this study has determined that the local feedstock of waste hardwood is sufficient to fulfill Corex's current and future manufacturing needs.

In addition, we have estimated that Corex could save up to \$250,000 per year by purchasing a grinder and utilizing local sources of waste hardwood to grind their wood flour on site. This assumes a conservative \$35.00/ton purchase price for waste hardwood. Some waste hardwood identified would be free of charge, which would increase the estimated savings for Corex to over \$300,000 annually.

³ A Literature-based Estimate of Woody Biomass Supply in Massachusetts, Draft Final Report, by Supply Subcommittee, Massachusetts Biomass Energy Working Group, Nov. 21, 2001 last revision.

Availability of Feedstock: *Approximately 4,000 Tons of Local and Regional Waste Products Available for Corex Manufacturing from just two local sources.*

We have determined that there are approximately 4,000 tons of waste wood available annually in the Springfield area (Corex's current demand is 2,288 tons annually). The following summary lists the two largest sources of waste hardwood with adequate moisture content, i.e. adequate for use in Corex's manufacturing process. Both of these sources have been contacted and both are confident about ongoing availability of this waste wood, which would come to Corex in the form of whole wood, wood chips or coarse wood flour. Both are also capable of producing 40 mesh flour, and thus can serve as a backup source of flour if Corex's grinder breaks or if a special order requires Corex purchase additional flour beyond what they are producing on site.

- F&G Recycling in East Windsor, CT uses recycled hardwood feedstock to make wood chips with a grinder. They currently do not make flour, but have a large operation (50 tons per week of chips) and theoretically could incorporate any size screen into their grinder to make wood flour adequate for Corex operations. F&G charges \$35/ton (\$.0175/lb.) for the chips.
- Ed Higley, Greenfield, Massachusetts Higley produces 27 tons of *coarse* hardwood flour per week and charges \$30/ton (\$.015/lb.) Freight On Board (FOB) for this flour which could be reground with a finer screen on site at Corex. It is currently mixed in with softwood flour; however, Mr. Higley is able to separate hard from soft on request. Higley also generates *fine* hardwood flour and sells it at \$45/ton FOB (\$.0225/lb.). His current capacity for the fine flour is approximately one ton per week. Higley also grinds plastic and rubber.* Note we can use this as potential back up source of flour.

Other confirmed sources of wood waste include the following. See Appendix B for a comprehensive inventory:

- 9 tons of clean waste wood weekly, free of charge within 20 miles of Springfield
- 15 tons of waste wood weekly free of charge that is partially treated and with some nails within 41 miles
- CET/www.materialsexchange.org website: Just from the businesses registered with CET's Material Exchange program website, which is not a comprehensive list for Massachusetts, we have estimated that nearly 500 tons per year of waste wood is available within approximately 100 miles of Corex. For more information, see www.materialsexchange.org.
- Forest and Wood Products Institute, at Mt. Wachusett Community College has estimated that approximately 250,000 tons of primary wood waste is available in Massachusetts alone annually. The Institute collected and confirmed this information from 19 different Federal, State and Non-profit sources. More information on the Institute is available at www.mwcc.mass.edu, or by calling 978-632-6600.

- Springfield Eco-Industrial Baseline Study documented that there are 35 wood manufacturing establishments in Springfield. Eighteen percent of the survey respondents mentioned having waste wood available. These businesses are smaller than Corex and are likely to be smaller generators of waste wood than Corex needs, however, they tend to be the businesses that are most burdened by the cost of waste disposal. A waste disposal relationship with Corex should be explored that is beneficial to all parties involved.
- Massachusetts DEP's Recycling Services Directory: After contacting several of the recycling businesses listed on this web site, we concluded these sources may not be the most appropriate suppliers of wood waste for Corex. Much of the wood that the recycling businesses have is from construction and demolition, and is filled with nails and other debris. In addition, most of the recyclers carrying waste wood were 50 mile or more from Springfield, making transportation costs higher. F&G Recycling was the exception.
- Connecticut DEP Solid Waste Division: Because Springfield is so close to many Connecticut communities, this source was helpful. With the assistance of this department, we identified F&G Recycling, located in East Windsor, Connecticut as a major source of waste wood for Corex. See Table 1 for a detailed financial analysis using F&G Recycling wood waste.

Waste School Furniture: *Approximately 12.5 Tons Available Annually.*

Based on total quantity, waste school furniture is a minimally significant potential source of feedstock for Corex. However, from a marketing perspective, it is an important relationship for Corex to pursue. Building relationships with school districts in the Springfield region, many of whom send their waste furniture to the landfill, may lead to these schools requesting Corex products for their new school furniture purchases.

- Surveys indicated that there are approximately 2,300 desks/chairs available now from school districts in Western Massachusetts and the Boston public schools. This furniture equals an estimated 12.5 tons or approximately 4 roll-out trash containers of waste. It appears that, although it is minimal, this quantity could be counted on annually, as different schools replace their furniture inventories each year. This potential supply increases if nearby Connecticut and New York schools are brought into the mix. Nearly every school we spoke with was eager to avoid sending any furniture to the landfill and would be interested in recycling it.
- Collection of the furniture would be required for the more distant schools, like Boston, but some nearby school districts said they would deliver the items if the disposal was free.

See Appendix C for results of school furniture survey.

Cost Benefit Analysis of a Wood Grinder Purchase: *Should Corex purchase a grinder to process their raw material, wood flour, on-site?*

As a part of the project, we rented a wood grinder for Corex similar to the one they have considered purchasing for on-site recycling. While it is known how the grinder performs when used with waste wood, it was not known how well it would perform when grinding already manufactured Corex products and Corex's own waste products. The grinder was tested for a two-week period using Corex's products (seconds and waste materials). Corex representatives were pleased with the results and are confident that a similar grinder will be capable of grinding waste wood and Corex products to a standard suitable for Corex's production process. It is important to note that it appears that the grinding mechanism used to process Corex materials will differ from the mechanism needed to grind waste wood. Solutions to this problem include purchasing two different grinders, or perhaps purchasing interchangeable grinding mechanisms that would work with one grinder. Please see Appendix for Corex's evaluation of the grinding test period.

During the grinding process, it was found that a secondary product resulting from the grinding of waste Corex components was a coarser flour not suitable for Corex's manufacturing process. Corex personnel determined that this secondary product could be sold to sandblasting businesses, especially those that specialize in historic buildings with more sensitive brickwork.

The Financial Analysis

Our research has shown that ample waste hardwood feedstock is available within approximately 25 miles of Corex for use with an on-site wood grinder. The estimated cost savings calculated below in Table 1 concludes that the purchase of the grinder could result in a lower net cost for wood flour, more profit for Corex, and a net increase in waste wood recycling.

Table 1: Financial Analysis of Grinder Purchase

Current Costs:		
Corex wood flour needs:	88,000	lbs. per week
	352,000	lbs. per month
or	176	tons per month
Current avg. flour costs (Louis Beede):	\$0.10	per lb.
Total Current Flour Costs	\$35,200	per month
Estimated Costs with Grinder:		
Corex wood flour needs	176	tons per month
F&G chips cost (1)	\$35	per ton
Total raw material costs	\$6,160	per month
Transport costs(2)	\$4,000	per month
Addl. Electricity/Fuel (3)	\$200	per month
Addl. Labor	\$3,000	per month
Grinder Repair/Maintenance	\$300	per month
Loan payment (4)	\$2,500	per month
Total est. costs with grinder	\$16,160	per month
Estimated savings for first five years	\$19,040	per month
	\$228,480	per year
Estimated savings after 5 year loan is paid off	\$21,540	per month
	\$258,480	per year

NOTES:

- (1) Much of the wood waste has been identified as free of charge. F&G's costs were used as conservative estimates. However, giving F&G a more regular market from Corex could increase capacity, move more material and recycle more wood, creating a net recycling gain overall.
- (2) Assumes cost of \$0.12/mile/1,000 lbs., but in F&G case and others, delivery could be arranged at lower cost.
- (3) Assume that grinder uses electricity not diesel or gas.
- (4) Assume a grinder cost of \$120,000, loan term of 5 years, and 5% interest rate (terms of the Massachusetts Business Development Corporation (MBDC) Recycling Loan Fund Program).
- (5) Corex currently purchases/uses two truckloads (44,000 lbs. each or 88,000 lbs.) of wood flour each week or approximately 4 million lbs. per year.

- (6) Corex pays \$0.08-0.10 per pound (\$80.00-100.00 per 1,000 pounds) for “back-up” flour mix (less fine) and \$.12 per pound for higher quality flour (\$120 for 1,000 pounds) including transportation. For the purpose of this analysis, we will use the average of \$0.10 per pound.
- (7) Average cost to transport truckload (44,000 lbs) feedstock 100 miles=\$500 (or \$.12/mile/1000 lbs.).
- (8) Grinder from Munson Machinery in Utica, NY can be sized to produce total wood flour required for operations in a 40-hour shift. Corex currently has the space and infrastructure to operationalize it. The grinder that could process 500 lbs. per hour would cost \$80,000. For the purposes of this analysis, a grinder purchase price of \$120,000 was used as an estimate for a larger grinder.

Conclusions: Based on the research presented in this study, it is feasible and could be profitable for Corex to purchase a properly sized grinder for on-site recycling. Hardwood waste wood sources have been contacted and their quantities confirmed by the project consultant, but to make this a truly feasible undertaking, the next step would be for Corex to contact waste hardwood suppliers directly, and build a relationship with them and negotiate business arrangements for waste wood purchases. It is important that Corex confirm directly with the waste wood suppliers the quantity, quality, and moisture content of wood sources. All these contacts should be made prior to final purchase of the grinder.

New Products, New Markets

Potential New Customers of Corex Products:

Corex currently sells their furniture components to companies that assemble the furniture and distribute the assembled furniture to schools. Given their new potential for cost savings, Corex is currently considering the cost and benefits of selling replacement parts directly to schools, cutting out the assembly and distribution “middle man”. In addition, Corex is beginning to research the feasibility of 1) assembling furniture on-site and selling assembled furniture directly to schools, and 2) selling furniture parts, unassembled, to schools where they can be easily assembled by school personnel.

In order to gain better insight into the market Corex may be entering, company representatives should attend the Recycled Products Vendors Fair hosted each year by the State of Massachusetts. This year, the 8th Annual Buy Recycled and Environmentally Preferable Products Vendor Fair and Conference will be held on October 29th, 2002 (sponsored by the Massachusetts Operational Services Division). This would give Corex more exposure in the recycled products market, especially for state institutions of higher education and school districts.

State Programs Encouraging School Departments to Procure Recycled-Only Materials:

The State of Massachusetts defines an environmentally preferable product as “products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. Such products or services may include, but are not limited to, those which contain recycled content, minimize waste, conserve energy or water, and reduce the amount of toxics disposed or consumed.” There are a number of State grant programs that encourage municipal recycled-material procurement practices. These include:

- *The Buy Recycled and Environmentally Preferable Products Vendor Fair and Conference*, sponsored by the MA Operational Services Division (OSD). This annual Fair will be held this year on October 29th at the Worcester Centrum Centre in Worcester, MA. The event brings together public sector purchasers, (including public school purchasers and business managers) from throughout Massachusetts and includes educational workshops and vendor displays. We have included more information on the Vendor Fair, including a vendor registration form, in Appendix D.
- The *Buy Recycled Awards Program*, is run by the MA OSD. The program recognizes “outstanding State agencies, municipalities and schools, as well as environmentally committed businesses, that successfully implement effective strategies for closing the recycling loop.” The awards are presented annually at the Buy Recycled and Environmentally Preferable Products Vendor Fair and Conference.
- Under OSD’s *Pilot Purchase Program* the Massachusetts Executive Office of Environmental Affairs (EOEA) funds the purchase and testing of environmentally preferable products throughout the State. The objective of the program is both “to gather information concerning product performance and acceptability, and to promote acceptance of environmentally preferable products that have widespread applications throughout the State. The products selected for testing generally demonstrate one or more of the following characteristics: recycled content, low toxicity, resource efficiency, or waste reduction.” The products may include those not included in State contracts if they are awaiting testing and evaluation; if they are products not widely accepted by purchasers but that have good performance and good potential for widespread State use; or if the product is an untested innovation.

Contact Dmitriy Nikolyev from OSD for additional information. He can be reached at (617) 720-3351, or dmitriy.nikolayev@osd.state.ma.us.

Additional Deliverables: The following were additional issues discussed at the March 13th Project Progress Meeting that NEI agreed to explore.

Research liability issues related to end users (schools, etc.) assembling furniture components on-site using Corex's insert components.

Molded inserts are metal (usually brass or steel) shaped metal pieces which when attached to an insert holder is able to be molded in a predesignated position in the product. Inserts allow a Corex component (i.e. desk top, seat bottom, etc.) to be sent directly to schools, and as long as the chair or desk frame matches specification or pattern, the piece of furniture can be assembled with a screwdriver. This has the potential to reduce shipping costs for the manufacturer (i.e. skips the assembler stage).

Nixon Peabody LLP, a law firm providing pro bono legal services to NEI, assisted us with this analysis. While the following is a brief summary of their analysis, we have attached the full memo NEI received from Katherine Donnelly at Nixon Peabody in Appendix E. Should Corex choose to ship insert components for end user assembly, the company will likely be held liable for:

- (a) defects in the component parts that are manufactured by Corex;
- (b) allegations that the assembly instructions are incorrect;
- (c) allegations that warnings are incorrect;
- (d) and, if Corex packages the entire product and ships it to a school for assembly, allegations that the metal pieces are defective.

Remedies include providing adequate instructions and warnings against foreseeable use and misuse, obtaining comprehensive insurance, obtaining a vendor's endorsement on any other component manufacturers' insurance policies, and be listed as a named insured. Please see the full memo for a more comprehensive discussion of these issues.

Determine if metal frames from school waste furniture can be refurbished, how much money schools receive for the metal frames they recycle, and where the metal goes.

At least three school districts we surveyed refurbish metal frames (Easthampton, Gateway Regional, Longmeadow). Several others recycled their metal frames (Longmeadow, Pioneer Valley, South Hadley). All three of these districts sent their metal to the town recycling facility. While Longmeadow is unclear if they get money for the frames, Pioneer Valley and Belchertown do not receive money.

With assistance from Corex, investigate incentives/benefits for schools using replacement parts (i.e. cost of inserts vs. cost of new chair) and preliminary feasibility of chair frame manufacturing and chair assembly on-site, and gain a better understanding of applicable profit margins (Corex, furniture assemblers)

NEI and Corex are planning to discuss this research in more detail in the coming months.

Confirm legal restrictions about school districts giving waste furniture to a private sector business

NEI sought assistance from our pro bono attorney at Nixon Peabody LLC regarding this issue as well. Their research concurred with our initial conclusions that there are no legal restrictions on school districts giving (at no charge) waste furniture to private sector businesses. A primary concern dealt with a Massachusetts law requiring state agencies to put items for disposal out to bid. However, we have found nothing to lead us to believe that there is a municipal counterpart to this law, and we are assuming that schools are under the jurisdiction of towns.

Gain a better understanding of how much schools use the internet to purchase furniture

Many online school-related municipal procurement service companies have gone out of business in the last couple of years. Others have consolidated operations. Currently, there appears to be three major web-based distributors: Epylon (<http://www.epylon.com>), SchoolHouse Link (<http://www.schoolhousetlink.com>), and School Buyers Online (<http://www.schoolbuyersonline.com>). The apparent financial difficulty in this industry leads us to believe that many of municipalities are reluctant to conduct furniture purchases online. Attached in Appendix F are news articles and profiles related to this issue.

Next Steps

This study concluded that it is feasible for Corex to purchase a grinder to prepare their wood flour on site. Next steps for this project include the following:

1. Corex must decide whether they want to make the capital purchase of the grinder(s) in return for the long-run savings.
2. Corex must finalize its analysis regarding the need to purchase two separate grinders or use interchangeable parts with one grinder.
3. Corex needs to confirm details about specific desired grinder specifications, building operational changes needed and related costs (if different from test model).
4. Corex needs to discuss grinder financing options with Mass Business Development Corp. Recycling Loan Program and possibly one bank, such as Fleet Community Banking Group, and go through the financing approval process. See Appendix G for Mass Business contact information.
5. Corex needs to contact waste wood sources listed in this report to confirm quantities and qualities and to negotiate business transactions, including delivery and storage arrangements.
6. City of Springfield should confirm waste wood sources and quantities available as identified in the Baseline Study.
7. With the above information in place, and feedstock sources confirmed directly by Corex, Corex should purchase a grinder and begin on-site production of wood flour.
8. City of Springfield should inquire with WasteCap and MassDevelopment on the potential for resource audits for other interested businesses.
9. City of Springfield should explore a revolving loan fund program for resource management through MassDevelopment to support similar projects.
10. City of Springfield should research business development opportunities related to supporting brokers for a local materials exchange program.

Strategy to continue this work with other businesses and potential businesses in Springfield

This project shows that there is a process that businesses can go through to assess the costs and benefits of substituting their business feedstock or input with a recycled or “waste” product. In Corex’s case, this study assessed that the company would save a significant amount of money if they used local waste wood sources and an on-site grinder to substitute for the wood flour Corex is purchasing at a premium from an out-of-the-area vendor.

Using Corex as a success story, and demonstrating the replicability of the process that was used to assess the substitutability of local waste wood for an imported raw material, the City of Springfield and the Eco-Industrial Advisory Board should “sell” the idea to other businesses.

Model for other communities

The City of Springfield with its partners on the Eco-Industrial Advisory Board including the Chamber of Commerce, is taking a leadership role unprecedented among Massachusetts communities to pursue potential materials exchange opportunities among businesses. Hopefully the findings of this study will encourage Springfield to continue on this Recycling-Based Economic Development path. In addition, the original eco-industrial baseline study and this RBED Phase II study should serve as models for other communities that having an environmental ethic makes economic sense.

Outreach strategies

Every business is interested in cutting costs, and most value the idea of reducing waste and buying locally. These themes, as well as other business-based principals, should be used in any outreach strategy, be it press releases, meetings with industry leaders, business trade associations or groups of businesses. To continue the material exchange economic development strategies, the City of Springfield should make a concerted effort to contact all the businesses involved in the Phase I Baseline Study, with a one-page summary of the Corex study, and reiterate to businesses that resources are available to help conduct a similar study. The EIAB and industry groups should be tapped to help identify and raise funds to conduct similar studies for those businesses who show interest.

The State DEP should be utilized for implementing outreach strategies, possibly as part of their Solid Waste committees, such as the Construction and Demolition Waste Advisory Committee.

APPENDICES

Appendix A: Scope of Work

Scope of Work

Identify local and regional waste products for use in Corex' manufacturing

The Contractor will identify a full range of possible local and regional byproducts that could serve as feedstock for manufacturing Corex products. Materials to be tested further include paper pulp, plastics, fiberboard and soft wood. All of the materials tested will be byproducts. Virgin materials will not be looked at for the purpose of this study.

Identify sources of old office and school furniture

The Contractor will identify and inventory sources of old and no-longer-used office and school furniture that could be collected in Springfield, in the Pioneer Valley region, and beyond. Corex has already discovered that it can re-use its own product once it is put through a grinder. Once the old school furniture components are ground down, they will be used as feedstock in the manufacturing process of new school furniture components. This will divert old furniture from going to the landfills.

Identify end customers of Corex products

The Contractor will identify how many end customers of Corex products would be willing to make arrangements to return broken or "outgrown" products back to Corex in return for a rebate or other pricing incentive.

Explore the feasibility of processing wood flour on site

The Contractor will calculate the feasibility of Corex processing wood flour on site using a re-grinder. Corex will use \$5,000 of contract funds to rent a wood grinder to test re-grinding process on-site with both Corex waste components and waste wood from local sources. This will ensure that if the grinding is done on-site versus purchasing flour from other suppliers, the end product flour is satisfactory for Corex to use in its manufacturing process.

Compare Corex operations with main competitors

The Contractor will compare Corex operations with two main competitors (Melsur in Vermont and Virco in Arkansas) to clarify 1) competitiveness of price for Corex products 2) products offered by competitors to further clarify Corex current and potential market niches, and 3) gather any information possible about the raw material sources for the competitors. INFORMATION ON COMPETITORS HAS BEEN REQUESTED, BUT HAS NOT BEEN RECEIVED.

Identify and analyze potential operational changes

The Contractor will identify and analyze potential operational changes needed for Corex or a new local business to manufacture the furniture on site.

Identify and research Federal and/or State grant programs that involve school furniture procurement

The Contractor will identify and research cases where Federal and/or State grants require or encourage school departments to procure recycled-only materials.

Additional Research Questions from March 14th project meeting:

Assist Corex with funding sources for costs related to renting and testing the grinder

Explore liability issues related with end users assembling chairs (using Corex insert components)

Determine if metal frames from school waste furniture can be refurbished, how much money schools receive for the metal frames they recycle, and where the metal goes

With assistance from Corex, investigate incentives/benefits for schools using replacement parts (i.e. cost of inserts vs. cost of new chair) and preliminary feasibility of chair frame manufacturing and chair assembly on-site, and gain a better understanding of applicable profit margins (Corex, furniture assemblers)

Confirm legal restrictions about school districts giving waste furniture to a private sector business

Gain a better understanding of how much schools use the internet to purchase furniture

Confirmed Local Wood Waste Sources

Charge	Quantity	Units	Frequency	Source	Condition	Distance	Current Use/Disposal	Contact Name	Phone	Company/Org	Address	Town	State	Comments	Materials Exchange*
\$35-50 per ton (negotiable) F.O.B.		50 tons	weekly	clean woodchips, can prepare as per needed specification	pallets, have the option to keep it inside	10 mi.+/-	selling as mulch, trail cover (is currently dying it red which makes it wet)	John Pizzimenti	860-746-3200	F&G Recycling (state licensed)		East Windsor	CT	Eager to make a deal, including transport costs. 6/6 confirmed - does not know moisture content, but know quite dry. Corax is welcome to come and test wood. Will have to figure out storage on site (currently chips are stored outside)	
\$30/ton course flour, \$45/ton fine flour F.O.B.	course - 27 fine - 1	tons	weekly	hardwood pallets	clean	39 mi.	selling	Ed Higley	413-773-9700	Ed Higley		Greenfield	MA	Fine Wood Flour: From onsite sawing hardwood lumber into pallets. Very, very fine (almost powder, twice size of cooking flour). Generates about a ton a week. Has it in a hopper, some people pick it up by the truck-up load, can also put it in Gaylord (cardboard) box which is the size of a pallet Course HardWood Flour: From grinding old wood pallets, nails have been removed. Generates about 50,000 lbs., or 100 cubic yards a week. Currently mixed in with softwood but can separate. Also grinds plastic and rubber.	
for transport only - \$70 tipping fee plus hauling fee (undetermined)		10 tons	weekly	hard wood pallets	have nails	131 mi.	sending to Henicker, NH for burning (co-generation)	Rod VanScivel	603-669-7743	Timbertech Co.	1359 Hooksett Rd.	Hooksett	NH	Not currently grinding into woodchips, but could working something out (easier to transport than pallets)	yes
none	4-6	tons	weekly	pallets, small scraps	some primed/latex paint, lots of nails & staples	24 mi.	currently going to NH for grinding	Al Dirth	413-247-9674	Brockway Smith	125 Chestnut Street	Hatfield	MA	I spoke with Rene Venne, referred me to Al Dirth. Interested in talking even though wood is going to NH right now.	yes
none	3	tons	weekly	slabs & edgings	clean	21 mi.	burning	Alan Page	413-323-4401	Green Diamond Systems	125 Blue Meadow Rd.	Belchertown	MA	Has white pine, red oak, white oak, maple, elm. More pine than hardwood. All have 20% - 300% moisture content, will kiln dry for \$300/ton. Will have long periods of pine then hardwood. Could exchange dumpsters.	yes
none	1	tons	weekly	MDF, also 30 - 40 16' pallets per week	pine and MDF is primed, pallets are not treated but have nails	41 mi.	burning it	Stan Waz	1-800-443-6013, swaz@awmlc.com	American Wood Moulding		Middletown	CT	primed wood and pallets could be easily seperated. COREX would need to supply the container and transport. 6/6 confirmed - has less MDF and pallets than indicated in March (30-40 pallets/wk and 600 lbs. of MDF/wk)	
?	0.5	tons	weekly	shredded wood, sawdust, also have seasoned logs (fairly dry) - do not have estimate on volume yet	clean	59 mi.	livestock bedding and then take back for compost	Steve Leining	(413) 528-8066	Sheffield Foods		Sheffield	MA		
none	pick-up full in summer only		weekly	wood chips - cherry and white oak	very clean	84 mi.	burning for heat (both factory and town residents)	Fred Eustis	978-827-3103	Eustis Enterprises	P.O. Box 842	Ashburnham	MA	nothing available in winter.	yes
?	?			wood chips		19 mi.		David	(413) 584-9104	Cotton Tree Service, Inc.		Northampton	MA	wood is available, call David for volume and pricing	

*** Materials Exchange - Participants are asked to contribute a portion of the savings achieved by using the Materials Exchange. Participants determine the amount to contribute, typically 20% of their savings or more. You can call us to discuss this percentage as it pertains to your particular situation. Savings for your business may include: avoided disposal costs, revenues from the sale of materials, purchasing savings, savings in staff costs due to saved time, avoided storage costs, or avoided administrative costs.

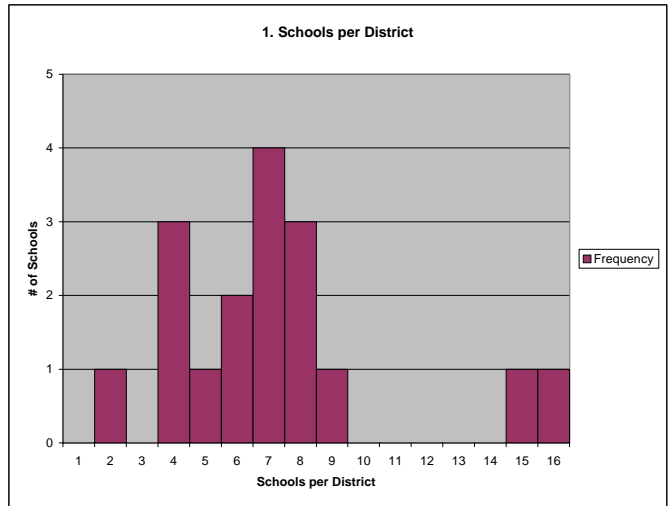
Confirmed Totals:

196,000 lbs	weekly	9,800,000 lbs	annually
98 tons	weekly	4,900 tons	annually

SCHOOL DISTRICT

1. How many schools are in the district?

Schools	# in district
Agawam	7
Amherst	7
Belchertown	6
Berkshire Hills	6
Chicopee	
East Longmeadow Public Schools	5
Easthampton Public Schools	6
Enfield Public Schools	12
Gateway Regional	7, one in progress
Granby Public Schools	3
Greenfield Public Schools	7
Hampden-Wilbraham Regional School District	8
Hampshire Regional	
Longmeadow	no response
Ludlow Public Schools	6
Northampton	6
Palmer Public Schools	3
Pioneer Valley Regional Schools	5
Pittsfield Public Schools	13
South Hadley Public Schools	4
Southwick-Tolland Regional School District	3 (shared w/ Granville)
Springfield	
West Springfield Public Schools	no response
Williamsburg Public Schools	2



Average number of schools per district:
 No response:

6.2
 2

2. Who is responsible for school furniture purchases/disposals?

The Business Manager is solely responsible for both Purchases and Disposal at 8 schools.
 The Principal is solely responsible for both Purchases and Disposal at 1 school.
 The Principal is responsible for Purchases and the Facilities Director is responsible for Disposal at 3 schools.
 The Business Manager is responsible for Purchases and the town is responsible for Disposal at 1 school.
 A mix of people are responsible for both Purchases and Disposal at 2 schools.
 Four schools did not answer the question.

	Business Mgr.	Facilities Mgr.	Principal	Town	Superintendent
Amherst		disposal only	purchases only		
Belchertown	disp & purch	disp & purch			
Berkshire Hills	purchases only	disposal only			
Chicopee					
East Longmeadow Public Schools	no response				
Easthampton Public Schools	disp & purch				
Enfield Public Schools	purchases only			disposal only	
Gateway Regional	no response				
Granby Public Schools	disp & purch		disp & purch		disp & purch
Greenfield Public Schools	no response				
Hampden-Wilbraham Regional School District	disp & purch				
Hampshire Regional					
Longmeadow					disp & purch (Asst. Super)
Ludlow Public Schools	disp & purch				
Palmer Public Schools		disposal only	purchases only		
Pioneer Valley Regional Schools	disp & purch				
Pittsfield Public Schools	disp & purch				
South Hadley Public Schools		disposal only	purchases only		
Southwick-Tolland Regional School District	disp & purch				
Springfield					
West Springfield Public Schools	no response				
Williamsburg Public Schools			disp & purch		

3. Does the district have any recycling/environmental guidelines or policies for Purchases, Disposal or Other?

Yes: Many said no official policies, except limitations on offering old furniture to private business, has to be non-profit
 Both 5
 Purchases Only 0
 Disposal Only 1
 Other: 1
 No Guidelines or Policies: 9
 No response: 3

	Yes	No	Other	Comments
Agawam	x			
Amherst		x		
Belchertown	x			
Birkshire Hills Regional		x		
Chicopee				
East Longmeadow Public Schools		no response		
Easthampton Public Schools	x			Hampshire Co. Purchasing Recycling - Ann Moran - florescent blurb recycling. No official policies but conscientious of recycling.
Enfield Public Schools		x		
Gateway Regional		x		
Granby Public Schools		x		
Greenfield Pucic Schools	no response			
Hampshire Regional				
Hampden-Wilbraham Regional School District		x		
Longmeadow Public Schools	no response			
Ludlow Public Schools		x		
Northampton	x			school committee has to declare it surplus, then not formal recycling policies, but try.
Palmer Public Schools	disposal	purchases		lists first with town, after that town handles disposal
Pioneer Valley Regional Schools	x			encourages use of green products. Strict don'ts. New waste water system
Pittsfield Public Schools	x			
South Hadley Public Schools		x		
Southwick-Tolland Regional School District		x		
Springfield				
West Springfield Public Schools	x			recycle wood furniture themselves...meaning if there is wood furniture, they refinish it. Old bleacher wood benches were recycled into shelving or cafeteria benches, metal components taken to landfill.
Williamsburg Public Schools			x	No standards, but practices - 2 older schools w/ original furniture from 1950s

SCHOOL FURNITURE

1. Does your school district have school furniture that is broken, outgrown or discontinued?

	Yes	No	Estimated Amount	Q. 7 Interested in Increasing Recycling?	Comments	
Agawam	x	x now	may have 60-90 desks/chairs in summer 2002	yes	just disposed of 200 desks/chairs in summer 2001	60
Amherst	x		30 yard container full	yes		500
Belchertown	x in 1 year		1 "roll out" full of desk tops=500 desk tops	yes	Just got rid of one roll out of desk tops to landfill	500
Birkshire Hills Regional		x now		yes	Will know more in a year, can't estimate now	
Boston Public Schools	x		about 100-125 desks/chairs annually	yes	very eager	100
Chicopee						
East Longmeadow Public Schools		x now		no response		
Easthampton Public Schools	x		60 desks & chairs	yes		60
Enfield CT Public Schools		x now		Don't know, Town decision		
Gateway Regional		x now		yes	have very little turnover of furniture	
Granby Public Schools		x now		it would be considered based on cost		
Greenfield Public Schools	x		can't estimate, but metal and plastic, not wood	yes, as long pick-up is not resp. of Greenfield		
Hampshire Regional						
Hampden-Wilbraham Regional School District	x		270 desks & chairs per year	yes, as long as at minimal or no cost		270
Longmeadow	x		600 desk chair sets (hard plastic, plastic)	yes	2 bldg projects underway next 18 months. Furniture is Columbia equiv.	600
Ludlow Public Schools	x		last year of replacement, unclear as to amount	yes, don't want to see it end up in the dump - even auctions have costs		50
Northampton		x now		yes	disposed of 500 desks/chairs in 2001	
Palmer Public Schools		x now		yes	looking to add furniture	
Pioneer Valley Regional Schools	x		100 desks & chairs	yes	Just renovated most of the schools	100
Pittsfield Public Schools	x		no response	yes		
South Hadley Public Schools		x now	just renovated	yes, but 1-2 pieces per year, because that's all that is necessary		
Southwick-Tolland Regional School District	x		60 desks & chairs+/-	yes		60
Springfield				yes, but costs of breaking down recyclables from non-recycleables too high		
West Springfield Public Schools		x now				
Williamsburg Public Schools	x in 2-5 years	x now	300 desks & chairs	yes, reuse preferred	schools to be renovated in 2-5 years	300 2600

Q1.
Totals: 2600 desks/chairs in next year-2
 plus 30 yard container and a "roll out" full of desk tops

Q7.

yes:	13	72%
yes, with costs covered:	4	22%
not sure:	1	6%
no:	0	0%
no response:	1	

2. What type of material does the school furniture contain?

hardwood: 8
 hard plastic: 17
 metal frames: 15
 other: 2

	hardwood	hard plastic	metal frames	other	Comments
Agawam	x	x	x		metal frames with composite tops
Amherst	x	x	x		hard plastic is minimal (chair seats)
Belchertown	x	x			mostly plastic on next go around, combination of chairs and desks
Berkshire Hills Regional	some	x	x		very little hard wood in furniture
Chicopee					
East Longmeadow Public Schools	no response				
Easthampton Public Schools	x	x	x	x	Purchasing gets bids and quotes and set up the towns in group purchasing process
Enfield Public Schools		x	x		Verko is the supplier, original furniture was Columbia
Gateway Regional	no response				
Granby Public Schools		x	x		Robert Lord, Birco distributors
Greenfield Public Schools		x	x		
Hampden-Wilbraham Regional School District		x	x	x	metal frames: Columbia furniture other: Corex products
Hampshire Regional					
Longmeadow Public Schools		x	x		
Ludlow Public Schools		x			Robert Lord
Northampton	x	x	c		
Palmer Puclic Schools		x	x		
Pioneer Valley Regional Schools	x	x	x		hard wood and hard plastic - combination
Pittsfield Public Schools	x	x	x		
South Hadley Public Schools	x	x	x		bid process, used folks on state list
Southwick-Tolland Regional School District		x	x		desks - Columbia, chairs - Arco Bell
Springfield					
West Springfield Public Schools		x	x		distributor /supplier is Columbia, Westfield, MA
Williamsburg Public Schools	x	x	x		chairs & desks - composition. Hard plastic is minimal. All contain metal frames

3. What is done with broken, outgrown and discontinued school furniture:

made available to other schools in the district: 6 schools
 made available to non-profits: 3
 stored: 4
 recycled: 6
 repaired: 5
 disposed of in trash: 6
 other: 7

	Other Schools	Non-profits	Stored	Recycled	Repaired	Disposed	Other	Comments
Agawam	x	x		x		x		disposal of whatever is leftover after attempts to give away recycled - metal area at land fill, wood holding area separated (under 4 feet) UMASS recycling takes all pallets, wood tops. Computers/monitors/keyboards/T V - \$5 ea. Amherst landfill slated to close < 25 yrs. recuded hours to 25 hros/wk and reduced dumping capacity
Amherst				x	x			metal is recycled, desk tops are disposed of
Belchertown				x		x		
Birkshire Hills Regional						x		
Chicopee								
East Longmeadow Public Schools							x	other - auction
Easthampton Public Schools	x	x	x	x	x	x	x	other - combination of all of these, depends on how it is broken. Metal desk pieces can be salvaged and reused for other desks
Enfield Public Schools			x		x		x	other - goes out of town for auction
Gateway Regional						x (very little)	x	student welding class fixes a lot of the broken furniture
Granby Public Schools			x		x		x	stored if suplus and future need. other - sell as salvage item
Greenfield Public Schools			x			x		
Hampden-Wilbraham Regional School District	x					x	x	other schools (in district) usually decline, disposal - trash picked up by BFI, 30 yrs old, not wood. Other - \$1 auction. Save wood if they have any
Hampshire Regional								
Longmeadow Public Schools				x		x		encourages refurbishing, if not - metal goes to town dump to be recycled, plastic tops are crushed and landfilled
Ludlow Public Schools	x		x		x	x	x	auctions and tax sales under \$5000 value of items, see disposal and procurement of property under Chapter 30B of MA General Laws
Northampton	x	x		x		x		Offered first to nursery schools, senior citizens, parks dept., etc. then to other schools. Very little disposed
Palmer Public Schools	x	x				x (very little)	x	other schools: private, non-profits: staff, community members auctioned it, metals are recycled, dispose = landfill
Pioneer Valley Regional Schools	x	x		x		x		other - "brought to dump"?
Pittsfield Public Schools						x	x	recycled - took apart and put legs in scrap metal dumpster
South Hadley Public Schools	x			x				disposal - dumpsters (until recently town wouldn't take). Other - auctioned 3 yrs ago - hesitant to say success
Southwick-Tolland Regional School District						x	x	
Springfield								
West Springfield Public Schools	x			(x)			x	Note: school did not respond that they recycle, however see question 3, school district, above. Other - auctioned, but usually doesn't sell, then goes to land fill
Williamsburg Public Schools		x		x				made available for annual tag sale, local land fill has separate zone for people to take

4. If you dispose of it, what are the costs for transportation and disposal/dump fees?

	Transportation Cost	Disposal Cost	Comments
Agawam Amherst		\$100/truck load = or < \$65/ton	60-90 desks/chairs in 22' box truck - cost not including labor
Belchertown		\$650 per 30 yd container	
Berkshire Hills Regional	no response		
Chicopee			
East Longmeadow Public Schools		n/a	
Easthampton Public Schools	no response		
Enfield Public Schools	no response		
Gateway Regional	?	?	haven't done it frequently
Granby Public Schools	?	n/a	haven't done it frequently
Greenfield Public Schools	none	none	town takes care of it, not add't cost to school district
Hampden-Wilbraham Regional School District	included in disposal	\$475 30 yd container	
Hampshire Regional			
Longmeadow Public Schools		\$2 - 3/ desk chair set	guesstimate
Ludlow Public Schools		\$600 for 40 yd container	
Northampton		exempt from tipping fee	labor is significant to load trucks
Palmer Public Schools	none	n/a	uses own vehicles
Pioneer Valley Regional School		\$400 per 30 yd container	cheaper to give away than dispose
Pittsburg Public Schools		\$80.45 a ton	
South Hadley Public Schools		n/a	
Southwick-Tolland Regional School District		labor hours	??
Springfield			
West Springfield Public Schools	?	?	
Williamsburg Public Schools	n/a	n/a	

5. If you store it, do you pay for storage? What is the long-term plan for the stored furniture?

Of the five schools that store furniture, four responded that they do not pay for storage and one did not respond to the question.

	Yes	No	Long-term plan	Comments
Amherst				
Belchertown				
Berkshire Hills Regional				
East Longmeadow Public Schools				
Easthampton Public Schools		no response		
Enfield Public Schools		x		
Gateway Regional Schools				
Granby Public Schools		x		
Greenfield Public Schools		x		
Hampden-Wilbraham Regional School District				
Longmeadow Public Schools				
Ludlow Public Schools		x		within schools or agreements w/ local businesses
Palmer Public Schools				
Pioneer Valley Regional School				
Pittsfield Public Schools				
South Hadley Public Schools				
Southwick-Tolland Regional School District				
West Springfield Public Schools				
Williamsburg Public Schools				

**6. If you have the school furniture recycled, what parts are recycled and are there cost associated with recycling?
 If there are costs, what are they?**

hardwood: 1 school
 hard plastic: 2
 metal frames: 4
 other: 1

One school recycles hardwood, hard plastic and metal frames (included in the above figures).

	hardwood	hard plastic	metal frames	other	cost?	Comments
Amherst	x	x	x		no response	
Belchertown			x		none	
Birkshire Hills Regional						
East Longmeadow Public Schools						
Easthampton Public Schools				x	none	put it out for recycling, not sure what happens to it.
Enfield Public Schools						
Gateway Regional						
Granby Public Schools						
Greenfield Public Schools						
Hampden-Wilbraham Regional School District						
Longmeadow Public Schools			x			
Ludlow Public Schools						
Palmer Public Schools						
Pioneer Valley Regional School			x		no response	
Pittsfield Public Schools						
South Hadley Public Schools					no response	
Southwick-Tolland Regional School District						
West Springfield Public Schools		x			no response	??? Did not include recycling in answer to #3 above.
Williamsburg Public Schools					no response	

7. See School Furniture, Question 1.

OTHER RESOURCES

1. Is your school currently involved in any recycling programs?
2. What types of materials are recycled? (e.g. wood, plastic, paper, glass)

All of the schools responding to question have recycling programs. The most common material to be recycled is paper (16 of 18) followed by plastic (7 of 18).

	Yes	No	Types of Materials	Comments
Agawam	x		Cardboard, paper, batteries, glass	
Amherst	x		wood, plastic, paper, cardboard and food waste	
Belchertown	x		paper, cardboard	at one site (Swift River Elementary) paper, cardboard, food waste for 6 yrs. Starting at K-2 schools
Berkshire Hills Regional	x		paper, cans?	
Chicopee				
East Longmeadow Public Schools	x		paper	
Easthampton Public Schools	x		paper	
Enfield Public Schools	x		paper, plastic, glass, cardboard, cans	
Gateway Regional Schools	x		plastic	students run plastic recycling program. Town does not have paper recycling
Granby Public Schools	x		paper	town has suggested guidelines for purchasing...certain amounts or recycled components
Greenfield Public Schools	x		plastic, paper glass	
Hampden-Wilbraham Regional School District	x		paper, glass, food service - all container (bottles, cans, etc.)	
Hampshire Regional				
Longmeadow Public Schools		no response		
Ludlow Public Schools	x		paper	
Northampton	x		lightbulbs, computers, paper, glass,	
Palmer Public Schools	x		plastic, paper, glass, metals, electronics	
Pioneer Valley Regional School	x		food waste, anything biodegradable	
Pittsfield Public Schools	x		paper	
South Hadley Public Schools	x		plastic, paper glass	
Southwick-Tolland Regional School District	x		paper	
West Springfield Public Schools	x		paper, computers remanufactured	
Williamsburg Public Schools	x		all plastic and paper	to transfer station

3. Does your school district organize summer or after school jobs for students?

Eleven schools responded to the question. Of these, 7 of them organize summer or after school jobs for students. The most common jobs are janitorial.

	Yes	No	Comments
Amherst	x		summer jobs, not a lot of work
Belchertown	x		student custodians in summer and substitute in school year
Birkshire Hills Regional	x		4-7 students, 35 hrs/wk in summer, grounds maint. and painting
East Longmeadow Public Schools			no response
Easthampton Public Schools	x		some jobs in the summer administrative, grounds, janitorial
Enfield Public Schools	not sure		
Gateway Regional		x	
Granby Public Schools		(x)	they do hire some summer custodians
Greenfield Public Schools		x	
Hampden-Wilbraham Regional School District	x		after school program sponsored through enviro club and pay to pick up blue recycling containers
Longmeadow Public Schools			no response
Ludlow Public Schools		x	
Palmer Public Schools	x		custodial jobs, not an organized program
Pioneer Valley Regional School	x		disassemble of furniture
Pittsfield Public Schools	x		
South Hadley Public Schools	x		high school. Program is called Connection Program for after school/summer jobs.
Southwick-Tolland Regional School District	x		5 or 6 kids in summer - janitorial and grounds
West Springfield Public Schools	x		some summer jobs. Usually hire grounds and custodial...college age or older high school.
Williamsburg Public Schools			no response

OTHER COMMENTS

	Comments
Amherst	ECO school buses: retrofit the old school buses to look at.
Belchertown	waste disposal going out to bid on 7/1, and looking for more
East Longmeadow Public Schools	none
Easthampton Public Schools	none
Enfield Public Schools	none
Granby Public Schools	none
Hampden-Wilbraham Regional School District	none
Ludlow Public Schools	none
Pioneer Valley Regional School	none
South Hadley Public Schools	none
Southwick-Tolland Regional School District	none
West Springfield Public Schools	none
Williamsburg Public Schools	Eric Weiss

Appendix D: Buy Recycled and Environmentally Preferable Products Vendor Fair

Appendix D is available in hard copy only. Please email info@chelseacenter.org to request a hard copy or call 617-887-2300.

Appendix E: Liability Issues of End Users Assembling Corex Insert Components

6/5/02 E-Mail Memorandum

From: Katie Donnelly, Nixon Peabody LLP

Re: Liability issues of end users assembling Corex insert components

There are three probable ways that Corex sells its products: 1) Corex manufactures component parts that are then sent out to another entity to package together (e.g., with bolts and metal pieces) for assembly at a school, or 2) Corex manufactures component parts and then purchases other component parts (e.g., bolts and metal pieces), packages them with assembly directions and ships them to schools for assembly, and 3) Corex manufactures component parts and ships them directly to the school for assembly, along with assembly instructions.

Although the law differs from state to state, it is anticipated that Corex will be liable for:

- (a) defects in the component parts that are manufactured by Corex;
- (b) allegations that the instructions are incorrect;
- (c) allegations that the warnings are incorrect, and;
- (d) if Corex packages the entire product and ships it to a school for assembly, allegations that the metal pieces are defective.

For the first method that Corex could sell its product, described above, Corex should provide any warnings against foreseeable use or misuse of the product (for example, persons over a certain weight should not sit on a component manufactured by Corex, and explain the dangers if a person over a certain weight actually does sit on the component part). It should obtain comprehensive insurance.

For the second method that Corex could sell its product, described above, Corex should do the same as in scenario 1, but it has the added liability of other component parts and instructions on how to assemble the finished product. In this case, the failure of the metal pieces is likely to be the main defect. Corex should obtain a vendor's endorsement on the other component manufacturers' insurance policies, and Corex should be listed as a named insured. The instructions should be clear, and should have enough pictures for a non-English speaking person to understand. If there are any dangers when assembling, these should be clearly discussed and shown. It is important to remember that the warning is for both foreseeable use of the product and misuse of the product. For example, it is foreseeable that a child will misuse a chair or desk by standing on it. The warning should be clear and should explain the dangers of the foreseeable use and misuse of the product. Corex should also obtain indemnity from the manufacturer of the metal component parts in its requirements contract with the other manufacturers of component parts.

For the third method that Corex could sell its product, described above, as in the second scenario, Corex should obtain comprehensive insurance, and it should provide adequate instructions and warning, including the size and type of other component parts should/should not be used in connection with the component parts manufactured by Corex.

Appendix F: Online Procurement of School Furniture (related articles)

Appendix D is available in hard copy only. Please email info@chelseacenter.org to request a hard copy or call 617-887-2300.

Appendix G: Loan Program Information for Grinder Purchase

MA DEP Recycling Loan Program: Since 1996, the Recycling Loan Fund (RLF) has closed 16 loans to recycling companies for a total of \$2.675 million, leveraging an additional \$8.7 million in public and private financing. RLF is funded by DEP at \$4 million and privately administered by the Massachusetts Business Development Corporation (MBDC). RLF serves the financing needs of the recycling industry (haulers, collectors, processors, manufacturers and retailers) by offering a wider variety of financing options. Loans range from \$50,000 to \$300,000. Also available from this program are grants and/or rebates for R&D, specifically for equipment testing. For more information: see <http://www.state.ma.us/osd/enviro/vendor/loan.htm> or contact: Carol Brennan, Tel: 413-732-3419 carolbrennan@mass-business.com