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Writing Business Plans
for
Recycling Enterprises: Plastics, Glass
or
Rubber

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Association of
Small Business Development Centers

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Association of Small Business Development Centers

(ASBDC)

The Association of Small Business Development Centers (ASBDC) is the pre-eminent national network for delivering counseling, training and information services to small businesses. It includes 950 subcenters in all 50 states, Guam, Puerto Rico and the Virgin Islands.

SBDCs each year service more than 550,000 start-up businesses with a combination of one-on-one counseling and workshops or training sessions. Many SBDCs also provide services in procurement, international trade, debt and equity financing, compliance with environmental regulations, and technology development.

Management is local, and the SBDCs serve local needs. The network also acts as a channel between local business-people and national organizations in business or government.

For information on the ASBDC, including the location of the SBDC office nearest you, contact the ASBDC at 3108 Columbia Pike #300 Arlington, VA 22204 Tel: (703) 271-8700.

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INTRODUCTION

The Guide's Contents

The **goal** of this guide is to describe the elements of formal, carefully written business plans specific to recycling post-consumer plastics, glass or rubber. The guide combines:

- *information* on how to write a business plan (Section One);
- *actual business plans* that have been used to launch successful enterprises (Section Two); and
- a *Resource Directory* enabling you to identify the resources you will need to complete your own plan (Section Three)

Who Should Read This Guide?

This guide is for anyone seriously interested in starting or expanding a business that recycles plastics, rubber or glass. This could include:

- Someone new to the recycling industry but interested in the opportunities provided by an expanding industry sector.
- A recycling business currently dealing with other commodities (paper, metals).
- A business already engaged in one phase of the processing of recycled plastic, rubber or glass and now interested in expanding into the other phases.
- Anyone contemplating using recycled instead of virgin materials.
- Someone in local, state or federal government who wishes to understand the industry requirements for recycling these three major feedstocks.

The following generalizations should be kept in mind:

- Recycling is, for the most part, a **manufacturing** industry but it also contains elements of a **service** industry. The guide responds to both needs.
- Some recyclers are substantial companies but some are small businesses. All face similar problems, and the guide gives examples from small and large companies.
- The recycling industry contains four basic components:
    - Collectors
    - Handlers
    - Processors
    - End-users

  Most recycling businesses include only one, two or three of these components.
- An end-user is any business which uses a recycled feedstock, typically in a manufacturing business, producing finished products made of recycled feedstock or using the feedstock in a direct application.
- This guide pays more attention to plastic than to glass or rubber, because for various reasons, it is the most complex of the three. At the end of most chapters, there is a section of comments directed at each feedstock separately.

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Why Should You Write a Special Business Plan?

To obtain financial backing for any business, one needs to present a fully-researched, carefully-written business plan.

Poor planning and lack of management skills are the major reasons that four out of five small businesses fail within the first five years. Any source of financial backing wants to see that you know your business in detail. You show your knowledge in the business plan.

A knowledgeable business plan is especially necessary in the recycling industry because of certain characteristics of the industry itself. First, the industry experiences dramatic shifts in commodity prices for scrap and recycled feedstock. Shifts in supply of and demand for recycled material affect both revenues and the cost of final goods produced with recycled feedstock. In your business plan, you need to evaluate thoroughly the potential impact of these price-changes for recycled materials.

Second, the potential of the recycling industry to reduce the pressure on municipal landfills and to conserve resources has brought it support from all levels of government. It can be highly profitable. However, an individual recycling business can prosper only by

- offering special quality at a competitive price,
- adding value to materials recovered from the waste stream,
- negotiating careful, appropriate contracts,
- knowing the technology thoroughly,
- knowing the market thoroughly, and
- running the business well.

Further, the recycling industry is developing rapidly, especially in technology. It is also affected by changing regulations at the federal and local levels. In sum, you have to be savvy to make it work. Writing a business plan forces you to identify and acquire the knowledge you need.

> Post-consumer plastics, glass and rubber differ in the business and technical problems they encounter. Your business plan must show that you understand the specifics for your chosen material, particularly in the areas of **production** and **marketing.**

Shortlist of Important Resources

Several industry organizations are outstanding in providing publications and information:

- ✓ American Plastics Council
- ✓ Association of Post-Consumer Plastics Recyclers
- ✓ Glass Packaging Institute
- ✓ Scrap Tire Management Council
- ✓ National Recycling Coalition
- ✓ Institute of Scrap Recycling Industries, Inc.
- ✓ Recycler's World

Many of these organizations have regional or local affiliates. Each industry has its own periodicals.

The Resource Directory of this guide covers available information sources. In particular, we recommend the following:

American Plastics Council, *How to Develop a Viable Post-Consumer Plastics Handling Business*, 1993. To obtain a copy, call the Council at 1-800-2-HELP-90.

American Plastics Council, *How to Collect Plastics for Recycling: Lessons from the Model Cities Demonstration Program*, 1995. A companion video is also available.
Charles S. Hughes, for the National Asphalt Pavement Association, *Scrap Tire Utilization*

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Technologies, 1993. For a copy, call NAPA at (301) 731-4621.

National Solid Wastes Management Association, *The Cost to Recycle at a Materials Recovery Facility,* 1992. For a copy, call NSWMA at (202) 659-4613.

Warren Purdy, for Inc. magazine and the ASBDC, *The Service Business Planning Guide,* 1996. For a copy, contact your local Small Business Development Center.

Resource Recycling Magazine, *The Directory of Key Recycling Contacts*, May, 1996. To obtain a copy, write to the Magazine at P. O. Box 10540, Portland, OR 97210.

Resource Recycling Magazine, *Financial Resources for Recycling and Waste Management Entrepreneurs*, 1996. Same source as preceding.

Resource Recycling Magazine, *Recycling Market Profile: Glass Containers*, 1995. Same source as preceding.

U. S. Environmental Protection Agency, *A Financing Guide for Recycling Businesses: Investment Forums, Meetings and Networks* (#EPA-530-R-96-012), 1996, available at 1-800-424-9346.

To be overwhelmed or overjoyed by the amount of information available, get on the Internet and contact Recycler's World at http://www.recycle.net (or use the Helpline at 519-767-2913) and the Institute of Scrap Recycling Industries (ISRI) at http:// www.isri.org/pubcat00.htm.

How Well Should You Write the Plan?

You should pay close attention both to the overall structure of your business plan and to the details of the writing. It should look thoroughly professional but need not be glossy.

The structure will probably show five or six main sections, plus appendices. Select and emphasize a clear and easy-to-follow structure. Use headings, subheadings and spacings that are consistent in type and style. Cross-reference from section to section to make sure a hasty reader doesn't think you have omitted something. Include a Table of Contents done at the very last minute to make sure your pagination is accurate.

Pay attention to spelling and grammar. Lay out the text to be readable (e.g. double-spacing, or short paragraphs). Use tables or figures. Format your document professionally rather than using home-typing. Cosmetics affect the reader strongly. Your goal is to impress the reader with your professionalism and quality, which shows attention to detail.

Keep your language simple. Avoid using jargon, acronyms and technical language which will not be understood by your non-specialist reader.

Make sure your data is *current*. It may take you six months to a year to complete your plan. Some data with which you began will already be outdated. Every reader notices references that are even three or four years old, and, if they know anything about the recycling business, they will know the data has since changed (For example, much of the numerical data about the recycling industry in this guide may be out of date by the time you read it). **Again, pay attention to the details.**

Many general guides to writing business plans have been published, and some existing companies make their successful business plans available on a confidential basis. Consult your state's Small Business Development Center for examples and options.

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Section I: Creating a Business Plan

This Section is divided into 14 chapters. They describe the components of a business plan for a recycling business and identify the type(s) of information to include in your plan. They do NOT represent a structure for your plan, simply because structures vary as writers adjust to their particular situations. However, a comprehensive plan for your business will require virtually all the information mentioned in these 14 chapters. We emphasize the following points in advance:

- The guide is written for both companies that collect and process recyclables and for companies planning to start up or expand manufacturing businesses that use recycled materials.

- Our estimate is that your plan will be about 20-40 pages in length, depending on appendices. You will need data about both local and national recycling along with complete financial planning data.

- Writing your business plan comes *after* you have already completed research into the possibility of opening a plastics, glass or rubber recycling business. You will have to know the local and state industry and government regulations very well.

- Your plan will need lots of information that you don't have at your fingertips. This is where the Resource Directory of this book becomes useful. Some resources are written materials; others are organizations. In the public library, seek out (1) up-to-date periodicals on changes in the recycling industry; (2) articles on successful *and* unsuccessful businesses; (3) guides on preparing business plans; (4) sources of funding.

- As you commit your plan to paper, refer to the sample plans section, where we have included actual business plans developed by entrepreneurs like yourself.

- You should write the plan differently according to whether you are approaching a lender or an investor. As a general rule, lenders emphasize facts. Investors will also want explanations and background.

. . . and Organizing the Final Document

To repeat, these 14 chapters do not represent a recommended structure for your business plan. You should choose your structure according to the nature of your particular business.

Your Business Plan will contain at least the following elements:

I. Executive Summary

II. Business Description
(Overview, Objectives, Product/Service Analysis, Pricing Policies, Management and Organization, Equipment, Facilities, Location, Government Regulation)

III. Financing Overview
(Financing Structure, Timetable, Use of Loan)

IV. Financial Projections
(Projected Income Statements, Projected Balance Sheets, Ratio Analysis, Profit Structure, Profitability Overview, Repayment Ability, etc.)

V. Exhibits and Appendices.

Other important items (such as Monthly Expense Summaries, Quarterly Operating Expenses and Historical Operating Analysis) will be included according to the advice of your accountant or the preference of the lender/investor to whom you are submitting the plan.

Other general guides to writing business plans will suggest various methods of organization. You will find them at your public library or Small Business Development Center. We wish to emphasize the three major components that must be highly visible in your plan:

- Executive Summary
- Business Description
- Financial Projections

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Chapter One: THE EXECUTIVE SUMMARY

The Executive Summary should appear first in your business plan. It is the first (and sometimes the last) thing potential lenders or investors read. It presents your vision for your business and it's your first and maybe only chance to sell that vision to a reader. It must be brief, clear, and to the point. It provides the minimum that enables lenders or investors to see the big picture in terms of your financial need—and to see that you can respond to their interests and needs.

We suggest that you first write a two- or three-page draft, then revise and correct it as you complete the body of your business plan. The final version cannot be written until you have completed all the rest of the plan.

THE BASICS

The challenges that a recycling business must face are the essence of the Executive Summary:

(1) what is the source of my feedstock and are supplies adequate?

(2) who are the customers for my eventual product?

(3) how do I change raw material into profitable product?

(4) what is the regulatory environment, present and future?

(5) how can I insulate my company from price volatility?

(6) how do I compete with virgin material and establish a market share?

The Executive Summary should answer the following in concise and unambiguous terms:

What are you planning to do?
(describe your business)

Why are you planning to do it?
(explain your business)

For whom are you planning to do it?
(identify your customers)

When are you planning to do it?
(timetable, schedules)

Where do you plan to do it?
(specific site selection)

Your Company's Role

The Executive Summary should carefully define where your business begins and ends. Every recycling industry contains four components: collecting, handling, processing, and producing an end-use product. Any one recycling company may undertake one or more of the components, and any of those components may be more or less complex. Especially, if there is a large overlap between handlers and processors.

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Your Executive Summary should make clear that you know how to link all the components to produce quality materials for resale on the open market. No component of the recycling industry can function alone. It must work with all the other components. It must also compete with products made of virgin materials. The shared goal of all components is to give end-users what they want.

Management Team

The Executive Summary should describe briefly the backgrounds and experience of the owner/managers. If you plan to have a board of directors or advisers, or if you are using consultants, their backgrounds should also be highlighted in terms of their most relevant experience. (You may include complete résumes in an appendix.)

Objectives

The Executive Summary should discuss your funding needs in terms of both intermediate and longer-term goals. For example, you may plan at some point to have your plastics recycling plant also process aluminum (soda cans, bottle caps, etc.). In sum, you should demonstrate that you have specific objectives for the funds you want. Think about your business plan in terms of a "project" with objectives and milestones.

Finances

The Executive Summary must state the type(s) of capital and amounts you hope to raise, and how and when you will repay it.

> You *must* include *summarized financial projections*, probably in the form of a 3-year balance sheet, income statement, and cash-flow statement. The lenders/investors want to know if and when they will get their money back, and their profit. Projections are critical.

You must specify how you intend to use the loan; that is, the part it plays in your overall plan. You should include a brief summary table showing the total project cost under such categories as Land Purchase, Building and Improvements, Equipment, Amortizable Fees/Expenses, Working Capital, or other appropriate headings. You should also include a table giving a three-year projection in dollars of your repayment schedule and/or the projected return on investment. This is your method for showing lenders when they will get back their investment and how great their profit will be. In essence, this is "the deal."

If you already have equity investors or large potential customers committed to the business, they should also be mentioned, unless you have a compelling reason to keep the information confidential.

Lenders may well propose a different financial structure for your project. However, incorporating an intended structure of the type described allows you to emphasize the potential returns on investment. You can make adjustments later. You can also later change the interest rate or the term of the loan according to the lenders' response. At this point, you give a **realistic** projection of the terms of the loan and the repayment conditions in order to answer the most obvious questions asked by any lender.

Linkages with Other Sections of the Plan

At this point, you cannot go into great detail. Instead, refer to other sections of the plan which present the details. For example, you may state in the Executive Summary that your operational plan is specifically designed "to overcome the many problems experienced in the XYZ industry." Then, refer the reader to the sections describing your business or your marketing plan, etc. At this point, you acknowledge that there are problems and responses.

PITFALLS

The major problems with most Executive Summaries are that they are too long, lack focus, and fail to garner the enthusiasm of the reader.

An Executive Summary should occupy only one or two pages. Remember, everything in this section will be explained in detail in some other part of the plan, so focus on the *opportunity for good returns* that your business presents.

Too many Executive Summaries fail to present the information potential lenders or investors want to see at a glance. You may not yet have met the person who will read your plan, and it will be read by others who do not know you (e.g. financial analysts, loan committee members). Write the Executive Summary from their viewpoint. It is like a sales presentation.

SOME EXPERT ADVICE:

"Attention to detail is important. I'm a form person as well as a content person. If I see poor wording, bad spelling, and lousy punctuation, it suggests that the writer does things sloppily. If the Executive Summary – something that's pretty important – is sloppy, maybe the business will be run that way, too. I'll read the whole plan, but my expectations will be much lower."

—Holly Thomas, Vice President, FirstUnion National Bank of Florida, Tampa, Fla.

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Executive Summary: SPECIFICS FOR PLASTICS RECYCLERS

At this point, you need to tell the reader exactly what components of the recycling process your business will include, and also perhaps why you have chosen those components.

Plastics Collectors
They collect plastics from consumers, industries, waste storage sites and other sources, usually in large-volume vehicles and containers. They sometimes alter the collected plastics to increase the weight to volume ratio, then they sell them to a handler. Collecting is a service industry, part of the transportation and storage sectors, with all the particular problems of those sectors.

Plastics Handlers
They receive the collected plastics from collectors, sort and separate them into categories, and then compact them, which may involve cleaning, baling and/or granulating. The materials then go on to a reclaimer. Handling is a manufacturing industry with a service component.

Plastics Reclaimers or Processors
They clean and pelletize or bale plastics for sale to end-users. The amount and nature of processing depends on the kinds of collected plastics which they receive and sell. Reclaiming is a manufacturing industry with a service component, especially in the area of marketing to the end-user.

Plastics End-Users
They convert the recycled plastic from pellets or flakes into new products (The products may be either final products ready for general sale or intermediate products for another manufacturer). This is a manufacturing industry with a large service component, including sales to industry buyers or the public.

Executive Summary: SPECIFICS FOR GLASS RECYCLERS

The four components are closely linked because most cullet (i. e. reclaimed glass containers) is used by bottle manufacturers. Good-quality cullet is an excellent substitute for virgin glass, but it must meet tight quality specifications. Collectors, handlers and processors of cullet face the same main problems—which are caused by color, contamination, breakage and residue. Thus, the end-users' needs dictate the procedures of the other three components, which must all cooperate to achieve quality.

Your Executive Summary should describe which components your business will include, what your sources and products will be, and any problems affecting the reclaiming process — such as type of glass and the reasons for choosing your type(s) of final product. You may also want to pay special attention to equipment. Technology is advancing rapidly in this area, and the type of equipment you can afford is closely related to the magnitude and profitability of your operation. Linkages between the two should be emphasized.

Your Executive Summary should also emphasize the significance of cullet, now used to produce more than a third of all new glass containers. If you are located in a state with a container redemption program, this should be emphasized. You should also explain the unique nature of the glass industry. For example, the limited number of suppliers of raw materials for glass; the limited number of glass manufacturers; and the sparse distribution of locations of glass recyclers. These are all the factors that determine the price of your product, the markets for different types of cullet, and other uses of cullet such as construction aggregate, etc. (An excellent source for this information is the *Recycling Market Profile: Glass Containers*, published by Resource Recycling Magazine. Tel.: 505-227-1319).

Do not simply reprint the sources' information about the industry. It needs to be incorporated into your business plan at various points. Each uniqueness in the glass industry represents a special problem to a local glass recycler. A problem, for instance, may lie in collection (these days emphasizing rural and small-town areas), or the proportion of colored glass (of less value than clear glass), or the transportation distance to a processor or end-user. Your business plan needs to show as it goes along that you see the problems and have anticipated solutions for them.

Executive Summary: SPECIFICS FOR RUBBER RECYCLERS

The components of the rubber recycling process are the same as those of the others. However, collecting and handling are simple in this industry, whereas processing varies from simple to highly complex, depending on the intended end-use. The end-user is by far the most important of the four components.

For example, the creation of asphalt rubber is a separate manufacturing industry. If you are processing scrap tires for it, you will need to describe its needs carefully in terms of its effects on your business. You may need to name individual companies which want their crumb-rubber to meet specifications different from those of other crumb-rubber suppliers.

As another example, some of your business may consist of supplying whole tires to end-users who will use them as embankments or breakwaters. Such end-users tend to be intermittent or one-time customers, so you will need to discuss the size of the overall market for such end-users and your plans for cultivating that market. However, if you manufacture and sell any of the many smaller products made from scrap tires, which include everything from matting for roads to ball-point pens, your business plan needs to address that particular business only.

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EXECUTIVE SUMMARY: A REAL-WORLD EXAMPLE (recycling post-consumer plastics)

Summary
Green Mountain Recycling Systems, Inc. is a company in the plastics reclamation field that is responding to the need for plastic molders to increase recycled plastics in their products. The company was founded in July 1993 with personal funds.

The Product
The products are reclaimed post-consumer plastics that have been restored to manufacturing quality. The first product is PET flake. This plastic is reclaimed from post-consumer soft drink bottles and returned to the manufacturing process for use in carpet, bottles and strapping. The second product is HDPE flake. This plastic is reclaimed from post-consumer milk containers and returned to the manufacturing process for use in bottles, shopping bags and containers.

Field Evaluation
The reclamation equipment used is employed in five different locations in the United States. Locations include California, Massachusetts, Florida, Ohio and New Jersey. Each of these facilities produces reclaimed plastics that are 99.999% pure. This product commands a premium price in the reclaimed plastic market due to its purity.

The Market
Manufacturers of plastic products are increasing their use of recycled plastic. However, the test for a recycling business is still whether it can produce recycled resin at competitive prices, recover costs and make a reasonable profit.

Production
Reclamation will be accomplished by grinding, washing, separating and drying post-consumer clear PET and HDPE bottles. As the company grows, the process will be expanded to include colored soda, oil, shampoo, and other post-consumer PET and HDPE bottles. In addition, an extrusion process will be added to produce higher margin plastic pellets.

Distribution
Reclaimed plastic will be sold to manufacturers of plastic products and virgin resin producers. These will include manufacturers of carpeting, blow-molded bottles, injection-molded bottles, plastic sheeting, containers and toys. Focus will initially be placed on manufacturers that are geographically close to maximum customer assurance efforts.

Financing Required
The company needs $1.6 million to fund the construction of a reclamation center, installation of reclamation equipment and implementation of a manufacturing plan to produce 1.2 million pounds of reclaimed plastic per month. In addition, the company needs to obtain $800,000 in working capital to fund expenses during the first year of operations.

Source: Missouri Small Business Development Center

Chapter Two: BUSINESS DESCRIPTION

To keep your Executive Summary brief, you will need to write an immediately subsequent chapter that gives an overview of your company. Be careful not to be repetitive and redundant.

If the products or services you plan to provide are unique or unusual, or if you are starting a business that has complex product or service offerings to multiple target markets, you must use a *Description of Business* section to give readers a full understanding of your target markets.

Further, each recycling industry — plastics, glass and rubber — has some special pitfalls, discussed later in this section, which you need to address early in your business plan. You may wish to create a *Description of Industry* sub-section which shows precisely how your business plan responds to the special issues in that industry.

The readers of your business plan may or may not understand the unique nature of your portion of the industry. If in doubt, ask someone experienced in the recycling industry or a prospective lender to comment on your clarity and completeness.

THE BASICS

Here are some of the situations in which you may find it useful to include one or more of the following sections:

Buying an Existing Business

If you are planning to purchase an existing business, this section is a good place to include its business history: when it was founded, how it was financed, how it was organized, how successful it has been, and why the current owners want to sell. You will need a separate Historical Financial Analysis. In addition, you should explain how you plan to carry out the transition from the current owner's management to yours in a way that maximizes customer goodwill. Often, the current owner provides services (such as working along with you) after you have purchased the business for a fixed length of time on a contract-for-services basis.

> In a separate section of the plan, you will need to provide a business valuation and numerous financial records, such as the last three years of financial statements and tax returns. Check with your accountant and refer to the appropriate resources for specific business valuation techniques.

Expanding an Existing Business

You will need to present the same information as above if you are expanding your own business. This is your chance to highlight why the expansion will have a beneficial effect on operations. In the case of existing businesses, whether you own the business or acquired it, you may be frank about past errors or weaknesses, and you may boast about successes. You are in a much better position than the lender to explain historical results.

New Product or Service

If your type of product or service either is new to the marketplace or deviates significantly from the way products or services are being offered and/or distributed by competitors, you should provide additional detail to ensure that those evaluating your plan don't simply discard it as just "one more business doing the same old thing." For example, let's look at a real business, Xymax 2001, Inc., a manufacturer of a composite material known as Bondomass, an end-user of post-consumer plastics. Bondomass is made from wheat straw and post-consumer plastics. It is molded

into highway sign posts, railroad ties, fence posts, and door and window frames that won't rot, warp, split, or give off toxic fumes. The process by which these items are manufactured is unusual because the composition of Bondomass can be altered to meet the demands of each particular application. Using more fibers, and fewer polymers, Bondomass becomes more lightweight yet maintains its strength, which is equal to standard wood products. The new technology means that Xymax 2001 will need to include in a *Description of Business* section details about its very innovative product.

Complex Product or Service Offerings

If your business has a number of product or service offerings, a variety of distribution strategies, and multiple target markets, a *Description of Business* section can be used to describe them in detail. A real-life example is Turnaround, Inc., a company that purchases outdated or unrepairable computers. Workers at Turnaround, Inc. separate the computer components into plastic, glass, circuit boards, and metal filings. The company then pelletizes the plastic casings for reuse. It also sells the circuit boards to a company that strips the metals to build new computers. The glass is crushed (along with the ceramics from the resistors), and the metal components are recycled by a business that melts items from a variety of sources for use in automobile manufacturing. Almost 93% of each computer that comes into Turnaround is recycled.

Because Turnaround, Inc. has such a broad array of services and potential clients, they included a *Description of Business* section in their plan to provide adequate detail on their financial needs and market estimates for a prospective investor or lender. So did AllTires, a collector and handler of scrap tires with multiple end-users over a large geographic region. In their business plan, they included a map showing the location of and mileage to their major suppliers and customers. This was done because haulage of various types of products played a very significant part in their later financial projections.

PITFALLS

Balance

You need to strike a balance between necessary and unnecessary detail. In the example of Xymax 2001, Inc., the Description section should not include a technical discussion about how plastic lumber is actually created but rather explain what makes it unique, what customers use it for, and how and why Xymax makes high quality material.

Expert Knowledge

On the other hand, don't assume that those evaluating your plan have high levels of expertise about your proposed business. There is nothing worse than a plan that's filled with jargon such as "polyethylene terephthalate," "melt-flow indices," or "magnetic separation systems." If the audience for your proposal doesn't have a clear understanding of what you are trying to do because they don't understand the language you are using, there is a high probability that your business plan will not be taken seriously.

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Business Description: SPECIFICS FOR PLASTICS RECYCLERS

There are long-term problems with recycling plastic, such as:

- lack of a mature infrastructure for collecting durable goods,
- lack of economical methods for dismantling durable goods,
- difficulties identifying plastics within durables,
- lack of economical technologies for sorting plastics,
- conflicts between product design objectives and recyclability,
- volatility of commodity markets; and
- competition with virgin resins.

Some forms of plastic (and some resins) are widely recycled, while others are rarely recycled. Since the situation is made unstable by the commodities market and by rapidly developing technologies, plastics recyclers need to show in their *Description of Business* section that they are very well-informed about the technical details and potential of the overall industry, including their part in it (See further in the following chapter on "Marketing Plan").

Business Description: SPECIFICS FOR GLASS RECYCLERS

The long-term problems for glass recyclers are:

- the need to manually separate colored from clear glass containers,
- the need to remove all contaminants from the cullet,
- near-monopoly conditions in some areas,
- variability of price for product versus stability of production costs,
- rapid development of new technologies,
- processing done by container-producers,
- transportation costs,
- variability of technical specifications; and
- applications other than glass containers.

Like the plastics recyclers, you must recognize in your *Description of Business* section at least some of these problems and your proposed solutions. Within recent years, the glass manufacturing and glass recycling industries have undergone a major shakeup. Though the situation has now stabilized, the industry's earlier reputation for riskiness may still remain.

Be aware that the glass industry, the bottle-producing industry and the cullet recycling industry are showing a remarkable degree of cooperation. Over the last decade, they have developed a good understanding of each other's problems. The result has been exciting ingenuity in overcoming the problems. **Above all, it is to the advantage of the container-manufacturers to use cullet, which now is used in more than one third of their products.** In other words, every industry problem seems likely to have an industry-generated solution. This is a point which you can make strongly in your *Description of Business* section and address throughout your plan.

Your plan will need similar information about the status of the industry if you pursue recycling opportunities for glass-related materials such as fiberglass, windshields, fluorescent lights or cathode ray tubes.

Business Description: SPECIFICS FOR RUBBER RECYCLERS

The rubber recycling industry consists almost entirely of the recycling of scrap tires. In most (but not all) states there is an overabundance of scrap tires. There are also several major and well-tested uses for them. Opportunities for recycling rubber from other sources exist, including butyl rubber scrap, PDM scrap, silicon rubber scrap, latex rubber, rubber belting and rubber hose. In this guide, we have focused on scrap tires. The Resource Directory in Section Three will lead you to detailed information on the other kinds of rubber.

The major uses for scrap tires are:

- as an energy resource, replacing traditional fuels;
- in civil engineering, such as for embankments and barriers; and
- as part of rubber-modified asphalt or as rubber matting.

In the first two cases, the collector/handlers may need to supply only whole tires to the end-user. Or they may need to supply them to a processor, who may shred, chop, dewire or grind them for the end-user.

The major problems facing the rubber recycling industry are:

- locations of the sources of supply of scrap tires;
- consistency in providing a supply to customers;
- high capital or initial costs;
- non-standardization of air permit regulations.

These problems vary considerably state by state, and it is essential that your *Description of Business* section respond to the needs and requirements of your state and your location within that state.

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Business Description: A Real-World Example (recycling medical waste)

"[Our] proposal is to establish a facility in Utica, New York that would process red bag waste in a manner that would first sterilize the waste using microwave technology and then sort the waste using various sorting technologies.

These steps are explained below:

Sterilization - recently New York State approved the use of microwaves to sterilize medical waste - these microwave machines first shred the medical waste and then pass the waste through a series of microwaves to kill any infectious bacteria. These microwave machines are made by ABB Sanitec, a European firm that has offices in Connecticut. These machines cost approximately $650,000 per machine and can process approximately 1,000 pounds per hour. Detailed information on this machine is available in Appendix 1.

Sorting - the discharge from the microwaves will then pass through a series of sorters.

i. Magnetic sorting - the discharge from the microwave will first pass through magnetic drum separators which will remove all metallic contents (info. in Appendix 2).
ii. Electro-static Separators - the remaining waste will then pass through electro-static separators to remove all plastics and non-magnetic metals (see Appendix 3).
iii. Float-Sink Tanks - the final separation process will be done through float-sink technology. In this process the remaining waste will pass through water filled tanks where paper and cloth will float on the water and all glass particles will sink for easy separation.

After separation, all materials will be collected and sent to the appropriate recycling facility. We anticipate that all metal, plastics, and glass will be easily recycled and may even result in generating some revenue for the operation, while it may cost the operation to dispose of cotton and paper. We expect that the net cost of disposal of the waste components will be zero since some components will generate revenue.

The major advantage of this system is that over 95% of all medical waste will be recycled and not be put into a landfill or incinerated. This will be an extremely attractive feature for medical waste generators, environmental groups and regulating agencies.

The other major advantage is that the cost of disinfecting and separating medical waste as described is estimated to be $.16 per pound, as opposed to $.20+ per pound to sterilize and incinerate or landfill."

Source: New York State Small Business Development Center

Chapter Three: MARKETING PLAN

The Marketing Plan section of your business plan is extremely important. It comes early in a business plan. It describes the market and defines precisely how you intend to operate in it. It must convince potential lenders and investors that there is *enough demand* to justify another business entering the marketplace.

The high failure rates of small businesses and recycling businesses are the basis for skepticism that lenders and investors often express. Your ability to describe your market and its potential for you is probably the most important tool you have to contest their skepticism.

Marketing is a comprehensive activity that includes determining:

- what **products or services to provide** and to whom
- how to **price** those products or services
- how to **promote** those products or services
- how to **deliver** them.

Each of these sub-activities should be explained at some point in your business plan.

The Marketing section of the plan should address certain activities in particular:

- overall market size,
- growth potential,
- competition,
- segmentation, and
- target market strategies.

(Pricing, sales procedures and promotional strategy may be detailed elsewhere in the plan)

A good marketing section can be written in three to four pages. You want to give enough detail to assure readers that there is a good, well-documented potential market for your product or service. This is essential in the recycling industry, where too many outsiders perceive that there are inadequate markets for recycled materials. But you do not want to overwhelm them with information. Include charts and tables that indicate how you plan to market your business. You may or may not need to quote specific strategies or dollar amounts.

> While reading the material in this chapter, be aware that your business plan will have to analyze, at one point or several points, the *changing* market, *difficulties* in supply and demand, and *shifting* prices — all of which affect your profitability. You have to think not just of the present situation but of future situations as well.

If you have a particularly complex or novel idea, you may want to create either a separate section or a sub-section entitled "Product Overview." In this way you can set the stage for the special marketing circumstances of your particular product or service without sounding defensive.

MARKET RESEARCH

Research is the process of gathering and analyzing data. The gathering data should not be too difficult but will take time. Much of the search for potential sources of information (e.g. magazine articles) in libraries is now done by computer, and most libraries, particularly those associated with Small Business Development Centers, will have professional reference staffs to assist you. The Internet will also provide current information (See especially the updated catalog of **ISRI** publications at http://www.isri.org, and **Recycler's World** at http:// www.recycle.net).

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> You do not have to do the research from scratch. The Resource Directory will lead you to many sources for information.

Thorough research is especially necessary in the recycling industry. New developments occur constantly. They come from both private industry and from government-sponsored scientific research. New and modified equipment appears, and so do new products. Changes in regulations and requirements for post-consumer content come in a steady flow. More information about costs and profits is published every year. This is an industry where you *must* stay current in terms of knowledge.

We specially recommend the resources of the National Solid Wastes Management Association and the Environmental Protection Agency. Resource Recycling and Recycling Times are periodicals that keep the recycling industry up-to-date. A number of directories identify companies which produce and purchase recycled materials (see Section 3) and, on the Internet, **Recycler's World** (http://www.recycle.net) includes a list of buyers and sellers of recycled materials.

In the area of plastics, the American Plastics Council is an invaluable resource. Special sources also exist for glass, in particular the magazines Resource Recycling and Glass Industry. Over the last decade, changes in the glass industry have been swift, unexpected and massive. The listing of cullet by the Chicago Board of Trade has been of help, but its information is patchy. The special sources for rubber are the Scrap Tire Management Council and Scrap Tire News. **Be careful that your information is not out of date in some crucial matter. Check with the authorities.**

Define Information Needs. Figure out what you are looking for before you search via computer. Develop a very specific list of questions (information needs that you want answered). The number of titles available will otherwise overwhelm you.

The best way to start the research process is to create a file folder for each topic. Then, in each file, make a list of the questions you need to answer (information required) to complete that section of your plan. You can start this process right now by generating your questions, chapter by chapter, as you read this guide. Finally, this structured system of gathering information will allow you to maximize the use of your time. If you are researching a question for your Market section and you find an article that includes some financial information, you can immediately place it in the appropriate folder for future reference.

Remember, the process of writing a business plan is not linear. You will constantly be discovering information that you can set aside to use at a later time or that will help you refine data already gathered.

Data Collection. There are basically two types of data. The lion's share of information will come from secondary sources and predominantly in written form — your job is to find them. Secondary data take much less time and is less expensive to collect than primary data, and, for your purposes, is generally more reliable.

However, information on the recycling industry is often quickly outdated. Or if it is new, it is subject to conflicting findings by researchers. Pay attention to the time at which the data was collected (three years ago?). Pay attention to the sources of your materials—are they representing a special interest?

The other type of data comes from primary sources. This is information not available in written form, and you have to find it by conducting interviews, completed questionnaires and observation. You will especially need to gather some primary information when you begin to evaluate your competition and start looking for a location. Your state's Small Business Development Center can help you.

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THE BASICS

The Marketing section of your business plan should include information about the following:

The Size of the Market

The first thing you must describe is your prospective market, including its size. You can assume that the reader of your business plan knows very little. Start with national and regional markets. Follow with information about your local market.

For instance, the computer recycling business in our earlier example knows that demand for their products and services will derive from advances in computer technology, the increasing obsolescence of older computers, and growth in the number of households that own computers. Therefore, the way to start the analysis would be to determine the precise predicted size of each of these factors, using sources identified in the Resource Directory.

In another example, the glass manufacturing industry is limited in the number of manufacturers and they are linked fairly tightly by contracts with recyclers, so that your local market must be shown as a very specific part of the national (and international) web of manufacturing and recycling businesses.

This national-market approach does not mean that your business has to be "big." You can show, instead, that small businesses of your type have succeeded in other locations, then compare the size of your local market with their local markets.

Trend Analysis

Related to the size of the market are the industry's growth trends. The future market potential for your business is an area that stakeholders evaluate very carefully. Recycling markets are volatile because of changes in:

- supply and demand
- prices for virgin material
- legislative initiatives
- price volatility on the commodity markets
- environmental concerns
- technical innovations.

Often you'll find trend data in the same resources you used to establish market size, but you may have to investigate further. Your information must be based on growth projections from your state and local agencies. Your goal is to demonstrate a positive growth trend in your specific industry in your market-area as well as nationally. It is not enough to say that "a lot of these types of businesses are already out there" as justification for offering another one.

The best sources for trend data for specific businesses are

- periodical indices,
- industry trade associations,
- franchise literature,
- state and local economic development and marketing agencies; and
- the National Recycling Coalition.

Be aware that in all three industries — plastics, glass and especially rubber — scientific investigation into new uses is currently extensive. Some investigations may have to be long-running (i.e. the recycling of rubber asphalt, the development of uses for glass bead, etc.). Some may prove unsuccessful or the product is too costly. Others may represent very significant opportunities that have not yet been determined. One glass recycling company, for example, included in its business plan a series of overlapping phases extending over ten years. Each phase represented the company's extension into a new application for cullet, with time allowed for research and market development as well as production. Thus, having researched trends, they included a response to these trends in their "marketing" section.

Market Segmentation

Once you have established that there is a market with positive growth trends for your proposed business on a national, regional and/or local basis, you must break down this data to reflect the conditions of the market you plan to serve, i.e. your **target market**. The process by which very large and somewhat homogeneous markets are reduced to smaller target markets is called **market segmentation.**

> The marketing involved in recycling industries is unusual. You "market" in two directions: your suppliers and your end-users. When discussing segmentation, pay attention to both.

The purpose of segmenting your market carefully is to ensure that your target market is accessible and large enough to sustain your overall operation. There are many ways to segment markets by characteristics: size, income, business type, geographic location, service area and so on. The end-user marketing a product made of recycled materials has the same complex task as any final producer of goods and services. The task is simpler for collectors, handlers and processors, as long as you are wary of overlooking excellent prospective customers. Your job is to choose and measure the characteristics that are most important in the definition of **whom** your business is trying to serve.

If you are starting a business that will sell recycled vinyl siding, you might segment your market by type of dwelling, family income, and geographic location. But if you are dealing with cullet, you need to identify your sources of supply and your customers—in sum, you need to measure both the local and the national market. If you are dealing with scrap tires, you need to decide where your state or regional market lies both now and in the future, and to determine whether you will seek out new end-users or deal only with those already in existence. You may also want to look at the international market for future sales and marketing potential.

Government Regulation

The recycling market is influenced by government regulation and legislation. Both can easily create or destroy markets for certain types of recycling. Before you complete your business plan, you should thoroughly research existing and pending legislation that may have an impact on your industry, intended location, or method of service. Likewise, look for opportunities that may have been created by the passage of recent laws or regulations. By carefully reviewing government actions, you may get a jump on the rest of the market.

State and local agencies in the areas of environmental protection and economic development can provide information about regulations affecting your business (Raymond Communications, Inc. publishes *State Recycling Laws Update*. Call (301) 345-4237 for a copy). You should also contact major trade associations for information about potential changes in regulations, particularly those at the federal level working their way through the three- to five-year legislative process.

You need to pay close attention to OSHA and EPA regulations because recycling plastic or rubber can cause hazardous waste or pollution of air and water. You must consult the state-level agencies in these areas. Further, in some jurisdictions environmental requirements are tighter than in the state as a whole or in the majority of the nation—and these are likely to be the "green" communities which encourage recycling (The Institute for Scrap Recycling Industries has several useful publications on environmental regulations. Call (202) 466-4050 or http://www.irsi.org).

Working with Local Government

Much of the regulation affecting recycling is local rather than national. In this and all matters, you must pay close attention to working with local government(s) whose jurisdiction you intend to operate. They are deeply involved with landfill regulation, tipping fees, mandates for recycled content, and economic incentives for recycling-related or environmentally-oriented businesses.

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Many local governments develop their own recycling programs and Materials Recovery Facilities, and operate them independently or by contracting with outside vendors. To compete, a prospective recycler must offer a service with advantages over the existing system. You need to work with a community to provide cost-effective services that can be sustained through innovative contractual arrangements (i.e. user-fee based systems, enterprise zones, franchised agreements). **Your business plan should emphasize these matters.**

The American Plastics Council points out that local governments and the plastics recycling industry have different goals. Local governments want to reduce the need for disposal facilities or landfills and to respond to public (political) demands. Recyclers add the desire to make a profit out of the business. These diverging interests can cause misunderstandings about the causes, costs and benefits of recycling. A prospective recycler should discuss the issues thoroughly and often with local government officials. In terms of marketing, you want to be seen as acting in the community's best interest.

The advantage of private recyclers is their ability to offer extended services in addition to collecting and handling services, which have long been municipal functions. The fact that you are part of a "*recycling industry"* gives you both a practical and a political advantage, suggests the American Plastics Council, displayed in terms of knowledge about markets, market specifications, commodity pricing, recovery techniques and costs and recycling business fluctuations, pitfalls and strengths." Responsiveness to the market of end-users is another advantage, as is knowledge of new prospective uses. Exactly the same statements could be made about the glass or rubber recycling industries.

> Price volatility is inherent in commodity markets. Both local governments and end-users tend to avoid long-term contracts. This makes it difficult for the recycler. Various and specific methods of solving this problem should be addressed by your marketing plan.

Your Competition

The goal of your business plan is to convince the reader that you have identified a large and growing market where you intend to do business. To do this, you should first take a look at your competition, then return to this most important issue in a separate section of the plan entitled "Market Share," which deals specifically with this topic (See later chapter in this guide). When you complete your analysis of the competition, return to the "marketing" section of your plan and include the evaluation of your market share here.

> Either in this section or the "Market Share" section, you should list your potential competitors by name and analyze them. You should refer to this analysis in your Executive Summary.

Your goal in this section is to specify your **advantages** over your competitors in the market, so it must be factual. One plastics recycling company, for example, was able to study the market and the competition in such detail that even at a time when the market had hit a downturn, it could identify its competitive advantages as quality, large volume, focus of product, location and company management. "Prior experience, it said, has shown that the company can obtain market prices for its finished goods which are significantly higher than prices paid to the average recycling company."

Your Unique Market

Your slice of the market will differ substantially according to the recycling functions you intend your business to cover.

For the collector, the market is the handler. Handlers increase the value of the material through sorting and densification, then market either to a reclaimer or an end-user. Reclaimers, with the task of transforming materials into feedstock, keep attention on the market of end-users manufacturing new products from post-consumer plastic or glass or rubber. End-users sell to manufacturers or retailers (depending on the product), and they must understand the markets for virgin feedstocks.

Ultimately, the customer buying from the end-user is the market for everyone. The task is to match the end-user's specifications back to the processing capability of the reclaimer which ultimately affects both the handler and the collector. In terms of the overall process, each component of the recycling industry markets all the other components, with the end-user as the ultimate arbiter. It is imperative that all components understand developments and markets for virgin feedstocks as well as recycled feedstocks. Changes in regulations, commodity prices and technology can impact your competitive advantage (or disadvantage).

To make matters more complex, the recycling industry is expanding as researchers find more uses for recycled products. A principal way for all functional components of the industry to expand is to market new uses. This may require the development of new methods and equipment by the reclaimer, the handler and the collector. In summary, you must pay constant attention to existing and new markets as well as new products when considering the recycling industry.

The Supply Problem

"Establishing and maintaining a reliable and consistent source of recycled 'raw materials' is a key step in ensuring the success of a recycled products manufacturing business." This advice comes from *A Business Guide to Recycling Market Development* by the Minnesota Office of Environmental Assistance, and it cannot be over-emphasized. It should also be considered in both local, national and international terms.

Although the recycling industry now exists throughout the country, its nature and quality vary from area to area, depending on many factors. This creates a need for you to examine the supply situation in your own area very carefully. Your aim is a stable supply of raw materials from known sources willing to respond to your needs, which may change according to factors over which you have no control.

Vermont, Connecticut, Minnesota and Wisconsin have already developed uses that consume most of the scrap tires generated within their own states. Another example is in the province of British Columbia where from 1990-1993, the percentage of scrap tires that were being recycled (or re-used) rose from 15% to 95%.

> The State of Minnesota recommends the following: "Specific strategies to source recyclable materials should be a key component of your business plan. Many businesses designate a full-time staff member to source recycled feedstock."

PITFALLS

The most significant problems you can encounter while developing a case for your market probably fall into one of the following categories:

Unbridled Optimism

Don't overstate your case. Be sure that your market data reflects demand for your products or services as closely as possible. For example, if you're planning to open an injection molding business that makes home and garden watering jugs and plant pots, don't simply use data that establishes that the average household with a certain income level will spend X dollars on lawn and garden supplies each year. The issue here is plastic watering jugs and plant pots, and if you researched a little further you could find a breakout of garden supplies in your area by material type (This may cause you to find an altogether different market: consumers or businesses that want to recycle their existing plant pots but can find no collector).

Your knowledge of trends, both national and international, can be made an advantage as you show your preparations for what the next few years are likely to produce in terms of markets. Do not engage in wild-eyed optimism or generalizations. These trends must be real, not speculative.

Stale Data

Be sure that your references are as up-to-date as possible. For example, the U. S. Census is conducted only once every 10 years, so the farther removed you are from the first year in each decade, the less reliable the data becomes. However, portions of the census are updated more frequently, and you can update it yourself by combining it with state or municipal government's estimates of population changes over that period. Good sources for current information are state demographers and economic development authorities.

Your data needs to be the most recent available. In the cullet industry, for example, the number of processors, the volume of recycling and the organization of the industry has shifted from one year to the next—even from one quarter to the next. As another example, a few years ago it was thought that through the use of pyrolysis, scrap tires could become a source of oil. Thirty-four projects started up, proving the process feasible. No projects exist today, because the product was too expensive, and yet the situation might reverse itself if and when an increase in tipping fees is mandated.

Too Little Documentation

Provide very specific references to give the reader confidence that credible sources were used to support your findings. In some cases, you may rely on footnotes. In other cases, you may want to include as appendices specific pieces of information, such as trade association studies or articles from business periodicals.

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Marketing Plan: SPECIFICS FOR PLASTICS RECYCLERS

General Information

In the plastics recycling industry, marketing is crucial:

- Recycled plastic is a commodity, and its price varies almost contract by contract. Where you are working with a base price that is partly out of your control and how do you get a customer to choose your product over that of others?

- The goal of collecting, handling and reclaiming is to produce a material that is marketable to an end-user, who will use it to manufacture or sell a product as he or she would any material. Your competition comes from other materials, including virgin feedstock. Their prices also vary on the commodity market, so your competitive situation can change very rapidly.

- The American Plastics Council emphasizes that an end-user is looking for a feedstock that has properties similar or superior to virgin feedstock. The desired properties vary from one end-user to the other, so you must work closely with identified end-users to produce **economically** the products they want. You need to lower their costs as well as your own.

- Within the plastics industry, recycled resin competes against virgin resin in terms of cost. Either kind of resin may be cheaper, but in some instances, the end-user chooses recycled resin because of the demand for recycled products as opposed to strictly choosing products by cost.

- Different techniques for shredding, granulating, pelletizing, washing and drying are needed for different markets, and each technique requires a variation in plants and equipment. Collectors, handlers, and processors often require each other to make changes in these areas.

- Each component in the recycling industry is marketing to the following component, and there may be several businesses operating in other component areas. They may have different requirements, and you may have to choose which requirements you can and cannot meet.

- Types of resin, quality specifications, location and market agreements are particularly important (For more detailed information, see *How to Develop a Viable Post-Consumer Plastics Handling Business*, pp. 10-11).

Resin Types

All phases of the recycling process are affected by the market for the type of resin present in post-consumer plastic. Collectors, handlers, processors and end-users all think in terms of "resin type" when choosing product. That choice is one of the most important decisions they encounter.

The category of plastic most frequently found in both municipal and commercial waste is called "**commodity plastics**." They are most often recycled because:

- they account for roughly two-thirds of all plastics sales;
- there is a high volume of materials; and
- they can be remolded.

The category of commodity plastics includes five basic resins. We draw your attention to these and other resin types because they complicate your marketing plans at every stage of the recycling process. Each type requires different sources, equipment and facilities, customers and markets. In some cases, national or regional networks already exist, and they should be an important part of your research process when determining the market. Research is currently under way, so be sure you are familiar with the most recent information.

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Polyethylene (PE)
PE is the most widely used consumer plastic. High Density PE was used for 60 percent of the plastic bottle market in 1991, and some 950 million pounds of HDPE bottles are discarded each year. Low density PE is often used as a film (e.g. for wrapping).

Polyethylene terephthalate (PET)
PET is used mostly in soft-drink bottles, of which 293 million pounds were recycled in 1991. It is also used in other bottles, insulation, carpet and fiber.

Polypropylene (PP)
PP has a wide variety of uses and has long been the primary material for automotive batteries. More than 144 million pounds from automotive batteries are recycled each year.

Polystyrene (PS)
PS is widely used for various forms of packaging. In 1991, 24 million pounds of it were recycled, and the National Polystyrene Recycling Company has been established by the largest manufacturing companies to create a nationwide post-consumer recycling infra-structure based on regional reprocessing facilities. There is also the Association of Foam Plastics Recyclers, a network of collection and processing businesses nationwide.

Polyvinyl chloride (PVC)
Commonly called vinyl, this is used to create a wide range of products. About 2 million pounds of post-consumer PVC bottles were recycled in 1991. Through Occidental Chemical Corporation, there is a nationwide commercial buy-back program.[1]

Plastics Collectors

The best information on products and markets for collectors appears in *How to Collect Plastics for Recycling* (American Plastics Council, 1995). The Council established and measured a nationwide demonstration program studying 22 collection programs. They aimed to identify the factors that could improve efficiency and lower costs.

The manual describing the nationwide program covers such matters as:

- information on plastics generation by households;
- how to calculate the expected rates of collection for your own program;
- how to select set-out containers, design routes, and estimate labor requirements;
- the performance of collection vehicles and equipment;
- comparisons between drop-off, source-separated, commingled and co-collection programs;
- average fully allocated collection costs; and
- how to estimate collection costs for your own program.

This data enables you to predict results from your own program—which is the aim of your study of the market you intend to cover. They help you make decisions about program design, collection vehicles, equipment, and labor requirements.

Plastics Handlers

The goal of the handler is to add value to the recycled plastics provided by the collectors. This means paying close attention not only to the kind of plastics collected but to the market for post-consumer plastics. As the American Plastics Council summarizes, handlers must know about:

- market needs
- the demand for specific resins
- quality specifications by the end-users
- market location
- resins reclaimed
- market agreements

[1] The American Plastic Society's, *How to Develop a Viable Post-Consumer Plastics Handling Business* (pp. 17-24).

For example, one processor may require only mixed plastics baled by the handler. Another may have requirements for product purity of resin type and color with little or no contamination, which requires the handler to sort and bale.

The demand for different plastic materials differs according to contamination levels, material uniformity, and material characteristics such as heat color and tolerance. Clear PET has a greater value than green PET because it can be made into products of any color. Again, the value of a bale of natural HDPE will be affected by the degree of contamination. In all these matters, the handler must respond to the quality specifications of the processor.

> The American Plastics Council assists handlers in locating potential markets. The Council gathered extensive information on more than 252 reclaimers nationwide, and it is available by calling the Council at 1-800-2-HELP-90.

Plastics Processors

According to the American Plastics Council, processed post-consumer plastics should be seen in terms of a spectrum of quality. "At the high-end of the spectrum, there are plastics that have been sorted, baled and/or custom-ground and are contaminant free. At the low-end of the spectrum, they are loose or baled mixed plastics with a relatively high level of contamination." Some reclaimers work with only one resin type. Others take many resins. Obviously, the processor's entire operation will be determined by the specifications of the end-user.

In transforming recycled plastic to match the end-users' specifications, the processor may use a variety of methods and equipment: washing and drying, custom-blending, extrusion, pelletizing, grinding, shredding and granulating (For further information, see *How to Develop a Viable Post-Consumer Plastics Handling Business*, pp. 13-14).

The major difficulty here is the swift change of technology in the plastics recycling industry, which, together with changes in the end-user market, may require you to make large investments in machinery and equipment. It may even outdate your existing equipment!

> A useful publication, though slightly outdated, is *The Cost to Recycle at a Materials Recovery Facility* (National Solid Wastes Management Association, 1992). It presents a table listing and describes all the types of equipment needed by a processor according to functions. A current and highly useful publication that comes from Resource Recycling Magazine, is their annual comprehensive guide to recycling equipment and manufacturers ($5.00).

Plastics End-Users

The major marketing task of the end-user is to identify markets for finished goods which can utilize recycled plastic feedstock (typically by resin-type) that can be used as a substitute for virgin feedstock. The end-user must also constantly re-examine what is available through the handling and processing phases, so that they can evaluate markets for finished products.

In some cases, the end-user can sell the final recycled product back to the original manufacturer (Automobile batteries are a prime example). In other cases, the end-user will be a product manufacturer who is choosing between different materials for his product. Because of fluctuating commodity markets, this choice can be very difficult for a product-manufacturer as the prices of both recycled plastics and alternative materials fluctuate. Price instability creates difficulties for end-users. For example, is it advantageous or even possible to establish long-term supply contracts? Or is it better to rely on short-term agreements that allow price flexibility?

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Marketing Plan: SPECIFICS FOR GLASS RECYCLERS

General Information

The glass recycling business primarily involves collecting and processing cullet for eventual re-use by the bottle-manufacturing industry, but more and more uses for processed cullet are appearing and many of them are already viable:

- 90 percent of the cullet used in the U. S. is consumed by container producers. There are fewer than 20 glass-container producers in the country, and the four largest producers control 80 percent of the market. Most container production facilities are located in five states: California, Illinois, Indiana, New Jersey and Pennsylvania.

- For some 15 years, the container production industry saw declines in profitability, changes in prices, consolidations and closures. In 1995, only 73 facilities remained in operation. Successful companies responded by modernization and increased efficiency, and the market they offer for cullet seems to have stabilized.

- Other uses for cullet include as a paving material (glasphalt, glass cement, trails and road base), as construction aggregate, as insulation in the form of fiberglass, in construction (tile, panels, bricks, synthetic marble), in paint (as glass beads), as blasting material, abrasives, etc. It should be noted that many of these uses have been developed by a single business or agency — this means that there is great opportunity for disseminating the product by developing markets in other geographical areas. A major source for information is the Glass Packaging Institute (Washington, D.C.).

- The market for cullet is increasingly international.

- In one project, researchers reported the main advantages of cullet to be as follows:
    - cullet compacts well, even in wet weather;
    - is an excellent additive to natural aggregate in static loading situations;
    - does not degrade under repeated loading;
    - is highly permeable; and
    - has no adverse environmental effects.

- Specifications for unprocessed and processed (furnace-ready) cullet are available from the Institute for Scrap Recycling Industries and the American Society for Testing and Materials. They are not in exact agreement, and there is some room for bargaining between buyers and sellers.

- The glass recycling industry has a substantial residue problem. Roughly a third of collected post-consumer glass ends up being unrecyclable, which means that each component of the industry should be prepared to dispose of varying portions of their material in landfills, etc.

Glass Collectors

Most cullet is collected in two ways:

- in states that require deposits on beverage containers (at least nine states);
- by means of curbside collection.

In many areas, collectors have banded together to sell scrap glass containers cooperatively, and new collection programs are primarily occurring in low-population areas.

The main problem for collectors is the commingling of glass containers in terms of color. The price for clear cullet is much higher than for commingled and colored cullet, and the markets for clear cullet are larger than those for colored or commingled cullet. The process of sorting by color is a major element in a collector's costs, since it has to be done manually. However, equipment to automate the process is already available and new technology is currently being developed.

Sorting by color is made more difficult when the containers are fragmented. This requires that a collector uses techniques and equipment that will reduce the amount of breakage ("Optimizing the collection of glass containers," a 4-page reprint from Resource Recycling, July 1995, is the best source of information about the nature of the problem and many alternative solutions). Because of breakage, the process is also dangerous to workers, which means the collector must pay attention to health plans and insurance.

A collector's operation may also undertake some decontamination (e.g. washing). The collector may also crush the containers after sorting in order to reduce the cost of transportation by increasing the weight per volume. All collectors must also make arrangements for dealing with residue, which is often substantial.

Glass Handlers and Processors

Some producers of glass containers accept cullet from collectors and process it themselves. In a recent trend, however, most producers now contract out the task of processing and have closed down their on-site facilities. In turn, with contracts in hand, the third-party processors often reduce the price paid to collectors.

The main problems facing a handler/processor are like those of the collector: sorting by color, breakage, and contamination. Arrangements with collectors determine whether or not the handler will undertake the sorting process, and most handlers seem to operate a processing facility as well.

Cullet processing *must* remove all contaminants from the cullet. Contaminants such as paper, metal and plastic represent 1 to 2 percent by weight of the glass containers collected in a typical recycling program. The contaminants cause serious problems in glass production. Aluminum and steel are serious contaminants, as are ceramics and other types of glass.[2]

The usual processes undertaken by a handler/processor therefore include:

- sorting by color
- material feeding and conveying
- impact crushing
- air classification
- screening
- metal separation
- vacuum extraction
- hand picking
- dust control
- disposal of residue and removed contaminants

The goal of these processes is to make a cullet that is furnace-ready for a glass-container manufacturer. Such a product has an immediate advantage over the raw materials used to produce virgin glass — the furnace temperature needed to melt it can be as much as 200 degrees lower than the temperature needed for virgin glass. Energy consumption is reduced, melt time is reduced, and lower temperatures produce less wear in the furnaces and perhaps fewer air emissions.

[2] Resource Recycling Magazine, "Recycling Market Profile: Glass Containers," 1995, pp. 3-4.

Glass End-Users

As we have said before, 90 percent of cullet goes to glass container manufacturers so most cullet producers will deal with the existing network within that industry. There is a general feeling in the industry, however, that various secondary markets for cullet have been insufficiently explored, and is now expanding. More than 70 non-container applications exist for cullet, though many are still in the experimentation stage (The Clean Washington Center has published a technical assessment of non-container applications. Call (206) 464-6282 for a copy).

In examining your market, it would be wise to explore these secondary markets, especially in alliance with your state and local authorities. They are particularly interested in the commingled or colored cullet which has less interest for the container industry. The regional offices of the Glass Packaging Institute can also provide invaluable information.

With an oversupply of some forms of cullet, legislators are also exploring new uses for cullet, and the overall trend in the United States is to follow the European trends, which show recovery rates as high as 70 percent — double the American rate.

Marketing Plan: SPECIFICS FOR SCRAP TIRE RECYCLERS

General Information

In 1991, scrap tire stockpiles contained 2 to 3 billion tires, and some 240 million tires each year were added to stockpiles, landfills or illegal dumps. During the years since, a whole series of new uses for scrap tires have been implemented. Government and private industry have cooperated closely. The result is that the Scrap Tire Management Council can now report that, "Legitimate markets for scrap tires are growing, and that, in a few years, concern over [stockpiled] scrap tires may be a thing of the past." In 1995, 69 percent of the scrap tires generated that year were recycled, an increase of 26 percent over 1994.

The main uses for scrap tires are:

- as an energy resource, burned especially in cement kilns and electric utilities or in special tires-to-energy facilities;
- in civil engineering uses, such as embankments, drainage layers, retaining walls and breakwaters;
- in rubber-modified asphalt.

In addition, many dozens of consumer products are now made from recycled scrap tires.

Two marketing problems in the rubber recycling industry need special mention:

✓ the situation determining supplies and markets varies very widely from state to state. In some states, almost all scrap tires have already found a market, whereas other states still allow their disposal in landfills.

✓ the legislative and regulatory environment varies considerably from state to state, and it is unclear in some matters at the federal level (e.g. mandates for rubber-modified asphalt).

The result is that the generally optimistic picture for scrap tire recycling may not be visible in your area. This could change your marketing strategy completely. Your description of The Market in your business plan must therefore be localized.

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Scrap Tire Collectors

Nearly all states now regulate scrap tires, and some impose very strict laws and regulations. The usual pattern is for the purchaser of a new tire to leave the scrap tire with the tire retailer, paying a tipping fee (usually state- or local-mandated) to cover subsequent handling costs. Other tires come from auto-dismantles. In this way, 95% of tires are now collected through the commercial mainstream.

Scrap Tire Handlers

Many handlers sort and inspect scrap tires, with the goal of determining whether they have enough tread to be resold as used tires or whether they are sound enough to be retreaded. There is a large industry in retreads, which are not included in the category of "scrap tires."

> For further information on retreaded tires, contact the American Retreaders Association, the National Tire Dealers and Retreaders Association, The Retread Information Bureau, the Rubber Manufacturers Association, or the International Tire and Rubber Association, which are listed in the Resource Directory in this guide. Remember, also, the resources of **Recycler's World** and the **Institute for Scrap Recycling Industries, Inc.** on the internet.

The remaining tires are trucked either to a scrap tire processing plant or directly to an end-user. Tire haulers may often have to be permitted, and, according to state and local regulation, they may have to utilize manifests to move scrap tires.

The sorting process means that a handler is not simply a hauler. The prices a handler receives for used tires, tires for retreading and scrap tires varies considerably (and locally), so this is an area where a handler may spend profitable time examining his market in more detail. Sorting into these categories, however, will require a facility that includes a sorting floor and storage space.

Some end-users use whole rather than processed tires. Most civil engineering uses, for example, involve stacked whole tires, which are impermeable and or resistant to water corrosion. Some handlers therefore deal directly with the end-user — typically a contractor to a county or municipal engineer. Normally, this is an intermittent market as projects begin and are completed, but in some states, whole scrap tires are so widely used that the projects provide a steady flow of business. It is a worthwhile market for a handler to investigate both locally and statewide.

Scrap Tire Processors

Scrap tires may be subjected to many kinds of treatment (other than burning). They may be chipped, shredded, crumbed, dewired, cut, stamped, powdered, and/or blended physically or chemically with another material. The casing, the lining and the tubing may all be reused separately. The choice of process will depend on:

- contracts with different types of end-users;
- capital available for processing equipment.

Tire processors will vary widely in size, volume and nature of business, and this is an area where your analysis of the market can be particularly important. You may choose to supply only one end-user and therefore will purchase only the kind of equipment needed to process scrap tires for this end-user. You may also find that investment in different kinds of equipment enables you to service many end-users.

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For this reason, your business plan should demonstrate that you have conducted a thorough analysis of the overall market, the share of the market you expect to gain, and the special segment or segments of the market you plan to occupy.

Scrap Tire End-Users

The market for scrap tires has developed with very rapidly, and it continues to change both nationwide and in any local area. A series of distinct and separate industries have grown-up using scrap tires, both whole and processed, as their feedstock. It is not appropriate for this guide to describe each of these in detail. The best sources of information are:

- Scrap Tire News, which includes stories about small end-users around the country as well as regular summary articles on the large industries that together make up the scrap tire market. Regular features include News Briefs, Legislative Updates and Company Profiles (call 203-668-5422 to subscribe).

- the *Scrap Tire Use/Disposal Study*, published annually or biennially by the Scrap Tire Management Council, which discusses the component industries of the market for scrap tires in detail (Call 202-682-4880 for the most recent issue).

For example, the 1995 *Scrap Tire Use/Disposal Study* discussed the following uses of scrap tires:

- as fuel in:
  - cement kilns
  - pulp and paper mill boilers
  - electricity-generating facilities
  - dedicated tires-to-energy facilities.

- size reduced-rubber in:
  - bound rubber products
  - new tire manufacturing
  - rubber-modified asphalt
  - athletic and recreational applications
  - friction material
  - molded and extruded plastics/rubber
- cut, stamped and punched rubber products
- civil engineering applications
- pyrolysis for product recovery
- exports of sound used tires
- in agriculture
- miscellaneous.

The *Study* concludes: "The STMC is projecting continued increases in all the major markets for scrap tires, and consistent markets for all the others reported on."

But the STMC does not underestimate the technical problems or the experimental nature or the regulatory issues connected with many uses, which is why we recommend that you use only the most current information (The Tire and Rubber Recycling Advisory Council (TRRAC) has undertaken projects and programs to establish better markets for recycled rubber products. They can be contacted at (800) 426-8835).

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Marketing Section: A Real-World Example (specialized plastics recycling)

The Market
Manufacturers of plastics' goods are dramatically increasing their use of reclaimed plastics in their production processes. They are demanding high quality reclaimed plastics for their consumer products. To date, manufacturers have only been able to obtain sufficient reclaimed plastic to replace 10 to 35% of virgin resins used in their products. They are actively encouraging local recycling efforts to increase the availability of reclaimed plastic. Manufacturers have four main interests in maximizing their use of reclaimed plastics:

1 Reclaimed plastics offer a way to reduce their manufacturing costs
2 Consumers are beginning to show a preference for environmentally-aware manufacturers.
3 Many states have mandated a timetable to eliminate plastic from the waste stream
4 Anticipation of a federal mandate to include recycled materials in their finished goods

The PET Market
The Center for Plastics Recycling Research indicates that last year 14.3 billion pounds of PET resin was used in the United States. The textile industry used 4.2 billion pounds and consumer packaging used 3.2 billion pounds. In 1987, 150 million pounds of reclaimed PET were used in place of virgin resins. That has grown to approximately 695 million pounds in 1993. In 1991, both PepsiCo Inc. and Coca-Cola Co. announced that they would begin to incorporate reclaimed PET in their bottles. This opened a market for an additional 750 million pounds of reclaimed PET. In 1992, Twinpak, Inc., Canada's largest PET bottle maker, announced plans to use reclaimed PET in their bottles in 1993. Textile manufacturers have increased the amount of reclaimed PET in their polyester carpets to more than 35%. The demand for reclaimed PET has driven today's prices to within 10% of the price of virgin resin. Research by the Council for Solid Waste Solutions indicates that PET's scrap value is only second to aluminum among container materials. The Center for Plastics Recycling Research projects that the market for reclaimed PET will grow between 11 and 17% annually. The Freedonia Group, a Cleveland-based research group, estimates that by the year 2000 the demand for reclaimed PET will have grown to 1.4 billion pounds annually.

The HDPE Market
The Center for Plastics Recycling Research at Rutgers University estimates that the United States will use 11.7 billion pounds of HDPE in 1993. Of this, 4 billion pounds will be used for blow-molded bottles and containers, 2.3 billion for extruded film and pipe, and 2.5 billion for injection molded caps, crates and pails. Of the total, 6.6 million pounds will be reclaimed HDPE. This has grown from 4.4 million pounds in 1987. This represents annual growth of 7%. The Freedonia Group estimates that the demand for reclaimed HDPE will grow to 3 billion pounds per year by the year 2000. Currently the demand for HDPE has pressured major bottle users, such as Lever Brothers, to include labels on their bottles encouraging recycling of HDPE. Injection molding uses the largest portion (38%) of reclaimed HDPE. This is followed by blow molding at 30% and extrusion at 25%.

Source: Missouri Small Business Development Center

Chapter Four: THE COMPETITION

A well thought-out and logically presented competitive analysis is a critical component of your business plan. The goal is to show that you have a thorough knowledge of where and who your competitors are, and of their relative strengths and weaknesses. **How you differentiate your business from the competition will be the key to its success.** Once you have accomplished this, you will be able to carve out a market niche for your business and estimate its size, as recommended in the previous chapter.

THE BASICS

The Competition section of your business plan should include the following:

Where Is Your Competition?

The best way to define your service area, in unambiguous terms, is literally to take a map and plot the area where you plan to concentrate your business. This process will define your customer base, help identify competition, and be an important factor in the development of your promotional strategy. For example, most handlers receive material from within a 50-mile radius. For handlers and collectors, transportation costs and haul distances define the market area and the location of potential customers.

As an example, take True Earth Construction, a start-up business that offers plastic lumber construction services (decks, sheds, and playhouses) to a clientele located within a two-hour round-trip drive from the owner's base of operation. The first step was for owner Doug Green to draw a circle with a 40-mile radius. He calculated that his trucks travel at an average of 40 mph with his location at the center. The area in the circle defined where his potential customers were located. Next, starting at the same point, he drew another circle with an 80-mile radius. Using the same logic, this new, larger area encompassed most of his competition, which included lumber yards, home centers, and general contractors.

For some types of end-users, defining the market and competition will be a more difficult task. Consider, for example, Bourne Manufacturing, which produces plastic sorting equipment for industrial use. Bourne's primary sales market is worldwide, and therefore they must consider all manufacturers of sorting equipment in the U.S. and abroad as competitors. Since Bourne is less likely to compete using geography as a marketing tool (shipping costs are minor compared to the cost of the equipment), it will focus on product differentiation and service to gain sales.

Even in the collection business, your competition may be regional, national or world-wide as well as local or area-wide. It depends on your product and the phase of the recycling process which you cover. Therefore, to identify your competition in your business plan, the first step is to:

- contact industry associations;
- specify to them very carefully the nature of your intended business; and
- request publications or sources that will assist you with your task.

You should also contact your local and state agencies at this time (for example, your county Economic Development Agency or State Department of Environmental Protection). Your aim is to be ahead of coming developments. People in these departments often know what is on the drawing-board but have not yet been announced.

Who Is Your Competition?

Next, take a closer look at the needs of your customers within your defined area. Revisit the basic description of your business at the beginning of your plan. Make sure you have identified all of the tangible and intangible characteristics that go into a comprehensive explanation of the

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customer needs your business expects to satisfy. You may find that you now need to add or delete some items.

Once you are focused on customer needs, you can begin the process of identifying your real competition. Put yourself in the position of a potential customer who is searching to satisfy a need. Take a simple example. Let's say a customer is looking for some new wood lawn furniture for their pool patio. They want the furniture to last for many seasons, but know that wood tends to rot easily in rainy climates. Therefore, they look for furniture made of plastic lumber. Even then, you, as a supplier of recycled plastic, are in competition with furniture made of virgin plastic feedstock. How do you make your recycled product more attractive to this customer than a similar product of virgin feedstock?

Take a more complex example. Glass-container manufacturers are eager to find cullet totally free of contaminants, including color. How can you design your whole business so as to eliminate the highest possible proportion of contaminants, which will give you a strong competitive edge?

Identifying your competition is a constant, steady effort. Your competition will also be in a constant state of change. For instance, a supplier or a customer may decided to recycle its own waste; a municipality may decide to use a different method or contractor; a new OSHA or EPA regulation or a land-use permit may create or eliminate competition. Or the particular industry in which you plan to operate may undergo a rapid and unexpected change — as did glass recycling recently.

General Resources for Identifying Competition

Your easiest sources for identifying competition include:

- trade and industry associations (state and national)
- national periodicals in your field
- licensing records
- Yellow Pages
- newspapers
- recycled product guides.

Among the special sources for the plastics recycling industry are the American Plastics Council and the Society for the Plastics Industry, and, since OSHA and EPA both require a plastic bottle processor to have permits and licenses, their state equivalents can be of help. For glass, the leading sources of information are the Glass Packaging Institute (with regional glass recycling programs), the European Container Glass Federation, and the Container Recycling Institute (Resource Recycling Magazine's, "Glass Containers," contains addresses and a listing of all container manufacturers and cullet processors accurate through 1995). For scrap tires, the leading source of information is the Scrap Tire Management Council's annual *Scrap Tire Users Directory*. Section Three of this guide will give you further ideas, and your local Small Business Development Center may also offer assistance. **Nothing can substitute for knowing people already inside the industry. Make acquaintances and ask their advice.**

Identifying Your Niche

Once you have identified your competition, you should undertake an organized SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis—a detailed written profile of each competitor according to these categories. Remember, you are looking for your special niche in the market. The goal now is to identify competitive gaps and weaknesses and then modify your products or services to exploit them.

As an example, you may find that as you call your competition to get information about their service area and rates, you always reach an answering machine. Although this may impede your research, think of how their current and prospective customers must feel! A clear weakness of your competitors is the difficulty clients experience trying to contact them. Should you offer customers a communications feature, such as a cellular phone or pager, so that you will be able to respond to customer calls immediately or on a very timely basis?

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> In the recycling industries, take special note of what kinds of product your competition chooses to ignore or underemphasize. In an industry undergoing constant technological development, your niche may lie in the neglected area.

The first step of your SWOT analysis is to make a list of what you consider to be all the relevant attributes of your business. This will bring you to a level of detail that you may not yet have considered. The attributes would include:

- What specific products or services will you provide?
- To whom will you provide these products or services?
- Where will you be located?
- What geographic area will you serve?
- How will you price your products or services?
- What will be your hours of operation?
- What will be your credit policy?
- How will you promote your product or service?
- What types of guarantees or assurances will you offer?
- What type of follow-up service will you provide?
- Other (to be added as you evaluate your competition).

At this point, you'll be ready to contact your competitors and compare what they say they do to what you plan to do. It is also important to ask these businesses to send you any promotional material they may have. Look for product or service features and opportunities you hadn't considered. For example, during its competitive analysis, Azure Recycling discovered a competitor who uses a new baling system allowing the company to increase the weight to volume ratio which reduces the cost of long-term storage and shipping. Azure Recycling decided it would also use this new baling system in order to become a viable competitor.

To facilitate this process, develop a grid comparing each competitor's attributes with those of your own. List your planned offerings at the bottom of the grid for comparison. Such a grid enables you to look at your competition, side-by-side, with your own business, and enhances your ability to identify gaps in service. Once you have gathered this information, you will be in a position to fine-tune your product or service offerings and begin to evaluate your potential market share. Time spent on this evaluation is well invested, because lack of thoroughness can have a compounding effect as you begin to forecast sales later on in your business plan.

The above process was used by one company, a producer of enzyme-based products and systems for cleaning wastewater, which was seeking capital to expand their customer-base greatly. Their business plan described their products and operations, in detail, by comparison with those of their competitors. Their SWOT analysis identified five principal competitors and described them according to sales volume, growth rate, degree of system integration, strengths and weaknesses.

Their section concluded: "In our industry, most of our competition markets a number of dissimilar and similar products. The range of their products is more limited than ours. They have very little specific knowledge of the different processes of a wastewater treatment facility, whereas our marketing is performed by a trained sales force with knowledge of wastewater treatment. Our product line is the only one geared strictly for the wastewater and bioremediation industries. At present, our products are the best available to these industries who select us because our products work and our Sales Representatives are knowledgeable." In a later section, they were also able to summarize their key success factors as price, technology, delivery time, quality, reputation, location and service — in each case comparing themselves with their competitors.

PITFALLS

Initial Product or Service Offering Too Broad

Proposing too many products or services will leave your business unfocused, with the risk of facing many more specialized competitors in the marketplace.

Underestimating the Competition

Failure to identify all relevant competitors will lead to false assumptions in market share and pricing, which could have devastating effects.

Overestimating Your Own Competitive Strength

Over-optimistic projections about your new product or service and customers' reaction to it, compared with that of your competition, can lead to the downfall of an otherwise great idea. Remember, intangibles such as customer "good will," brand fidelity, length of operation in an area, management experience and friendships. If you are trying to replace an existing contractor, you must be fully able to compete over the long term.

Failure to Modify Your Plan

If you neglect to make adequate changes to your initial plan based on findings in your SWOT analysis, your business may be doomed before you start. Your competition is likely to respond by introducing similar features to their own products or contracts, so you must emphasize in your plan features they cannot imitate — especially quality of product and service.

Potential problems can be avoided by being attentive to detail while remaining flexible as you conduct your analysis. On the one hand, be sure to identify and document your competition as it exists; on the other, look for opportunities and take advantage of them where possible.

SOME EXPERT ADVICE:

"People aren't stupid. If you are doing something right, and it works, then sooner or later they're going to figure it out and come after you. Can your people respond? Can you keep innovating? Can you stay ahead? These are the real questions you should be dealing with."

—Ken Hendricks, Founder and CEO, ABC Supply Co., Beloit, Wisc.

Competition: SPECIFICS FOR PLASTICS RECYCLERS

Plastics Collectors

At the time of writing (1997), capacity is excessive and supply of recyclable materials is the main problem. Your ongoing aim is therefore:

- first, to discover the sources that will provide recyclable material to you (e.g. a large manufacturer with considerable waste);
- to determine whether the existing handling and reclaiming infrastructure can absorb additional material which you could provide.

Your direct competition is other collectors, including other scrap/waste collectors or major corporations with their own recycling processes. You need also to determine whether existing contracts, including those between municipalities and existing collectors, cover recycled materials of the type you are considering. If not, you have an opportunity.

Most collectors of recyclable materials find that plastics represent a small portion of their total waste stream. Many do not find it cost-effective to invest in plastic-sorting equipment unless they already have an established market. In turn, most processors of post-consumer plastics do not want and cannot process commingled material. They concentrate on one (perhaps two) resin type(s). You therefore need to identify handling and processing facilities that deal with the type and volume of plastics you propose to collect and deliver. The key matter is whether you or a handler does the sorting of commingled materials. Remember also that certain types of plastic resins go only to regional processing facilities, which contract with collectors in local areas.

Assuming these problems are solved, you need to look for advantages you have over the competition from other collectors—such as a shorter hauling distance or different delivery specifications for the handler, or flexibility in the way you accept materials. You will also look carefully at the arrangement of your own plant and the manner of collecting/sorting you use in order to identify possible efficiencies. In sum, where competition exists, you should look for:

- holes and niches that you can fill, and
- methods that will make your charges lower.

Plastics Handlers

You should examine carefully the operations of other handlers in the area or region, which will be limited in number. Study whether you have advantages in terms of:

- geographical area
- transportation costs
- sources of scrap material
- types of plastic handled

Handlers can also ship to regional processing facilities which serve national and international markets, and you should determine whether such a facility needs the type of plastic you can provide.

To expand your market, you may combine or contract with a collecting facility and/or a processing facility. Large quantities of commingled post-consumer plastics may be available, but they usually contain a high level of unmarketable material, contamination and trash. If you can identify a collector which can supply large quantities of high quality materials suited to the resin which a processor wants you to provide, then you should form a long-term contractual arrangement with them both. (Warning: many collectors and processors do not want to make contractual arrangements with start-ups because of their lack of payment history.)

When choosing your location and designing your facility, you should pay close attention to the needs of collectors, especially private haulers. It is one of the best ways to compete with other handlers. A handler must do everything within reason to minimize a collector's unloading time. Unloading delays can reduce a collector's profit. A collector is more likely to choose a handler that causes the

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least off-route time rather than one that pays a higher price for the materials (One current handler, for instance, receives 85% of its feedstock from five collectors).

While writing your business plan, you should meet with private haulers and discuss with them the design of your handling facility. For instance, haulers typically want to deliver compacted materials in order to maximize payloads. Their truck body types, gross vehicle weights, unloading height requirements and vehicle maneuverability should be taken into account in designing your facility. If you can jointly agree upon material specifications and requirements, you will assure that the correct quality of material is delivered.

The matter of a tipping fee also is important to your competitiveness. It is likely you will charge the collector/hauler a tipping fee at the time of delivery. If so, you should pay them promptly for the materials they bring. Typical industry terms for payment to collectors for feedstock is 45 to 60 days. You should try to reduce this substantially.

Your facility should be designed to receive material on a regular basis. Delays cause collectors to maintain their own storage facilities, which is an added cost. In some cases, large collectors can contract and schedule a month in advance, which means you need to schedule your facility and your production in a similarly forward-looking manner. This can greatly enhance your competitiveness.

Be aware that competitiveness often requires handlers to enter into contracts or market agreements to secure pricing and quantities. As part of those agreements, aim to lower the costs of the collector by stabilizing the delivery phase by designing your company to accommodate them.

Plastics Processors

Your competition for selling recycled feedstock to an end-user comes from three sources:

- other reclamation facilities in your geographical region;
- other distant reclaimers reached through the national market for recycled feedstocks created by the commodity markets of the Chicago Board of Trade, which enable end-users to choose recycled feedstocks comparable in price and quality regardless of location; and
- virgin feedstocks.

The following are some of the ways in which you can compete:

- produce high-quality, comparable material;
- produce material to the exact specifications of the end-user;
- produce material more cost-effectively;
- offer major end-users a large volume of material on a regular and reliable schedule, so that they do not need to seek other sources;
- produce only one or, at most, two recycled resins (i.e. concentrate on a narrow market rather than also on glass, paper, aluminum, rubber, etc.);
- seek end-users throughout the country—transportation costs are a small part of the cost of the materials;
- manage your company efficiently (i.e. automated equipment or a motivated and well-paid labor force).

The phases of sorting and processing are labor-intensive and are at risk for high turnover in employees, unpredictable quality and quantity in the sorting process, and the need to over-staff and over-pay to retain experienced employees. Increasingly, processing companies are developing highly-advanced sorting operations, using computer-technology with infrared and x-ray sensors. The equipment, however, is expensive.

Plastics End-users

Your competition comes from similar products made of virgin feedstocks. The use of recycled products interests consumers with environmental concerns, but price and quality have much more influence on the customer's final purchasing decision. Therefore, products made of recycled

feedstock must compete in all ways with products made of virgin resins. Focusing on environmental considerations alone will limit the market for your product.

For that reason, it is best to reduce the cost of your post-consumer plastics feedstock by working with the businesses in other phases of the recycling process—processors, handlers and even collectors. If you can help them standardize their operations by means of schedules, contracts and rapid payment systems then your own costs will also decrease.

Competition: SPECIFICS FOR GLASS RECYCLERS

The advice just given to plastics recyclers applies to almost all glass recyclers. In addition, finding a niche is difficult because the glass-container manufacturing industry is a near monopoly. It may be that your geographical area of operations creates a niche for you. A map of the U. S. showing the location of existing glass recyclers reveals that most of the country lacks processors that produce cullet. Or it may be that you can specialize in a different product from most competitors (i.e. colored glass or fiberglass) and therefore other end-users. It is likely that you will form alliances with other cullet collectors or processors, which means you will have to think of your competitors as potential allies. Can you add something to their operation, such as increased volume? Can you use some of their "residue"? Can you, together, offer new products or lower transportation costs?

> There is a high degree of necessary cooperation as well as competition within the glass recycling industry. We recommend adopting cooperative attitudes in order to find your competitive niche.

Since the Chicago Board of Trade now provides a computerized commodity listing for cullet, you will need to watch recent price quotes from cullet buyers and sellers. Even then, you may be unable to compete on price and you must find some other competitive advantage.

You also need to pay close attention to your location in relation to locations of other processing facilities and end-users, particularly since the cost of transportation is a significant portion of the cost of cullet. The price paid for clear cullet is higher than that paid for amber or green cullet so find your niche by improving the proportion of clear cullet you produce or by investment (i.e. special sorting equipment or countermeasures against breakage). Finally, look for your niche among secondary uses of cullet. It is likely that these uses will provide the area of greatest growth in the future.

Competition: SPECIFICS FOR RUBBER RECYCLERS

The advice given to plastics recyclers above also applies to all rubber recyclers. We emphasize the need to look closely at your particular local situation to determine whether your supply of scrap tires is large or small, and to investigate opportunities that have or have not been created by legislation and regulation.

Several publications of the Scrap Tire Management Council can help:

- ✓ *State Scrap Tire Management Programs: Annual Report*
  This is a good source for finding the rules and permit requirements needed to get in business, learning how to access sources of funding, knowing what to consider when setting marketing priorities, and getting informed on specific markets and how to use various state resources to stimulate markets in your state.

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- ✓ *Scrap Tire Users Directory* (annual)
  This will help you to locate processors, recycled rubber manufacturers and tire industry suppliers in your area. It lists more than 1,900 companies. It also includes a Market Study and a Stockpile Abatement Progress Report. It increasingly emphasizes the international market.

- ✓ *Recycled Rubber Products Catalog*
  Intended to make the general public aware of the large number of products made of recycled rubber, and hence to expand the industry, this is an excellent source of ideas for smaller end-users. It gives details of a large number of existing companies and describes their products. A search through the offerings will give you ideas and show the inventiveness with which end-users have responded to the availability of scrap tires.

- ✓ Scrap Tire News contains not only articles but advertisements of products and used or new equipment.

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Competition: A Real-World Example (a plastics collection company)

BASIS OF COMPETITION AND KEY SUCCESS FACTORS

Price: Env-Clean products are competitively priced in the marketplace. We have maintained a high quality product that is usually more economical to use than a less potent, inexpensive product.

Technology: We have been a leader in technology for wastewater treatment and bioremediation since our inception. Our products have been used as guidelines for municipal bidding formats and specifications. Our bacterial strains are the most effective in the market and are among the most potent.

Delivery Time: We ship our product on the same day as we receive a sales order if it is in-house by 3:00 P.M. Normal delivery time is two days, which has been applauded by our customers. Our Sales Representatives are trained, and required, to react to a customer inquiry the same day.

Quality: The seeds of the product are cultivated by different fermentation companies, each not knowing the full formulations. The different strains are shipped back to our plant where quality control and formulation occur. Our products are carefully maintained at a minimum of 5 billion bacteria/gram. The enzyme activity is also carefully monitored.

Reputation: Env-Clean has successfully provided the wastewater and bioremediation industries with the best available product in the marketplace. From this position it has accomplished and retained a reputation of being the best.

Location: Carmel, New York is situated in the Hudson Valley Region of New York State. This location is a benefit for sales in our current and immediate future selling territories.

Service: Our Sales Representatives are trained, and required, to react to customers inquiries the same day. We are one of the few companies in this market that maintains a direct sales force. Our competition uses less knowledgeable distribution networks. Our service is second to none.

Our customers are confident with our product because of our high quality and reputation in the industry. Our price is competitive and our technology, service and delivery time is exceptional.

Source: New York State Small Business Development Center

COMPETITOR PROFILE

COMPANY	SALES VOLUME ($000)	GROW RATE	DEGREE OF INTEGRATION	STRENGTHS	WEAKNESSES
BRONSY	130,000			Technology. Cash Reserve.	Use distributors.
Bio-Chem Division	5,000	Slow	Slow Forward	National.	Poor product knowledge. Less potent. Not very diverse.
Polychem Corp.	3,000	Slow	Slow Forward	Direct sales. Technology.	Foreign owned. Sales force is poorly trained. Not very diverse.
LabEco, Inc.	1,040,000			Known in restaurants for	Greasetrap market only.
Bacterial Product Division	3,000	Medium	Average Forward	dishwashing detergents. Cash reserve. Direct Sales	Poor product quality. Poor product knowledge.
Staken	2,400,000			Technology.	Chemical
Resolve	6,000	Medium	Average Forward	Cash Reserve. National.	Product.
Rid-X	4,000	Medium	Average Forward	Name Recognition.	
Coytracts Co	1,630,000			Technology. Cash Reserve.	Chemical Product.
425	6,000	Medium	Average Forward	National. Name Recognition.	
Total Sales volume/avg. growth rate	5,203,000 27,000	40%			
Competitor's market share	.05% Neg'1				
Industry market share	103,600,000 15,128,207				

* Top figures represent total industry and lower figure represents our market industry.

Source: New York State Small Business Development Center

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Chapter Five: IDENTIFYING MARKET SHARE

After describing your market and your competition, your business plan can now define the share of the market you expect to capture. The process described in this chapter is the positive side of the process described in Chapter Four—now you are aggressively designing how to capture your share of the overall market, either by taking business away from competitors or by identifying new opportunities.

Describing your market share is not a highly scientific process but an informed evaluation based on your research. Identifying your market share leads your business plan into the area of finances—essentially you begin to make sales projections at this point. This will form the basis of the cash-flow analysis you will present in a later section.

There are several methods for making reasonable sales projections. They are as follows:

- **Average Competitor Sales**

Estimate the sales levels of your competitors. You can acquire this data from sales tax records, from a count of the number of competing establishments, and from industry associations. To project your own sales levels, use sales levels similar to, but lower than, the average of those of competitors. If there are no nearby competitors similar to you, then use the sale levels of similar businesses in other regions.

- **Average Customer Base**

Estimate your customer base from information you have already acquired. Analyze the businesses with which you will do business—that is, those who will supply you with materials or accept materials from you.

- **National or Regional Demand Data**

Use data supplied by industry associations and researchers to estimate the probable amount and type of recyclable material available to you and the probable amount you can sell. This is especially important in areas where recycling activities are recent.

For example, a new company sought to issue shares. It specialized in producing a line of outdoor equipment of all kinds that would be distinctively "green" (i.e. it would be environmentally and socially responsible). Its customers would be the 80+ million outdoor enthusiasts in the United States, plus those in Canada, Europe and Asia. They used two approaches in their business plan to estimate their market share.

First, they defined their primary target market as mountain bikers, cross-country skiers, climbers, and hikers/backpackers. They then used various published and industry sources to estimate that market share by dollar sales volume at $3 billion per year. The data concerning the number of participants in each sport came from American Sports Data, Inc., multiplied by $100, the amount each participant spent per year. More data came from competitors' sales. Then they estimated the percentage of this primary market that the new company must capture in order to meet its sales forecasts for each of the next five years.

Their business plan described their research sources and its findings in detail and with frankness—resulting in a section that consisted of fifteen pages. Second, they followed immediately with an equally long chapter entitled "[Our] Advantages." Here, the company took the data about the market and competition presented previously and identified exactly where the company intended to fit, how it intended to compete, what share of the market it intended to reach at what point in time, and how it had designed its operations to meet the national and international competition.

The result of these thirty pages is that any reader would agree that the company already (1) thoroughly knows the business it proposes to enter; and (2) knows how it can occupy a profitable share of the market.

International Opportunities

Currently, the international market is in a state of rapid growth, or at least flux, for all three feedstocks discussed in this guide. There have been numerous examples where exports to or imports from other countries have supported a recycling business which had only considered themselves "national players".

Too many factors are at work in too many different countries for detailed discussion in this guide. In some countries, the use of plastic, glass or rubber products is rapidly increasing, and American-produced recycled feedstock can compete well with virgin feedstock in terms of both price and quality. In other countries, there is a lack of recycling processors or end-users, so that these countries can supply your feedstock at lower prices. In most countries, wages for manual workers are lower, and you may be able to relocate part of your operations overseas, which may decrease costs of labor without overly increasing the costs of transportation.

Developed countries all have recycling industries of their own, but developing countries are producing increasing quantities of "waste" without the capital or knowledge for dealing with it. There is no obstacle to prevent the recycling industry, as a whole, from internationalizing. We recommend that you look for international customers when determining your market share, since many American companies do not think beyond our national borders. This advice applies to collectors as well as end-users.

PITFALLS

Unrealistic Market Share Projections

Make your sales and market share projections conservative. It is usually a good idea to make two projections: one at the level that you think you can reasonably achieve and the other at a level closer to your break-even point. Many business plans phase-in an increasingly large market share by projecting marketing and sales over a number of years (usually three to five), and they coordinate their financial needs with planned expansion.

Sales Projections Exceed Capacity

Be careful not to show sales levels that cannot be maintained with the resources indicated in your business plan. For example, make sure to plan for enough trucks and drivers to meet your projected demand or the kind of equipment you can realistically afford at this point.

Target Market Too Broad

Do not try to be all things to all people. Segment your market and differentiate your services. You can always expand your business later.

Profitability

Be sure that your target market is large enough to be profitable.

SOME EXPERT ADVICE:

"We aimed for the top five name-brand customers in our field. Everything we did was geared toward bringing our product to those companies. Rather than sell to the 27th player in the market, we proactively went after those five. And, as a result, within five years, we were leading our industry in market share and pushing the 40%-plus mark."

— Ken Marshall, President and CEO, Object Design, Burlington, Mass.

Market Share: SPECIFICS FOR PLASTICS RECYCLERS

In all phases of the business of recycling plastics, determining your market share is a process which begins with your first thoughts about the business: Is there an opportunity here? You are constantly looking at your market share in terms of:

- the available types and quantity of materials; and
- the type of service you will provide.

In some cases, calculating your market share is fairly simple and can be done by the methods described above. However, we repeat that the post-consumer plastics recycling industry is in a state of swift change.

Determining your market and market share is the essence of your business, and in your business plan you must be specific. Your sales projections should be time-limited. It should be clear that:

- you are writing for a certain set of circumstances;
- you are aware of the major changes that could occur; and
- you have a planned response to likely change.

Plastics Collectors

The sources for scrap plastic vary from large industrial waste-generators to common residential waste. One way to determine your market share is to decide to concentrate on specific sources (e.g. automobile parts, household appliances, bottle manufacturers). Your choice will affect the whole structure of your business.

You already have seen the effect of the size of your market on the nature of your business. To determine your market share, you need to know the size of the geographical area, the number of competitors, the rate at which scrap plastics are generated, the kind of plastics generated, and the legislative or regulatory requirements. By putting this information together, you will be able to specify both:

- the exact nature of your collection business, and
- your market share.

Several publications of the American Plastics Council illustrate how to determine the amount or generation rate of scrap plastic in your area. These publications are noted in the Resource Directory.

Plastics Handlers

Market demand for sorted scrap plastics and the competition determine your market share. Further, important factors are the demand for specific resins, quality specifications, and the types of resin you plan to reclaim.

Handling facilities are located in distinct geographic areas, so your market share will usually be determined by the type and amount of available scrap plastic in the region where your handling facility is located. However, if you recycle specific types of resin, that geographical region may extend over several states and you may deal with numerous collectors. Certain handlers, in fact, locate depots far from their handling facility where scrap is deposited by collectors.

Much of your market share will depend upon the competition from other handlers. Much will depend upon the proximity of reclaimers and end-users. Contracts with one or two major customers will define your market share in that manner and thus change the structure of your business.

Plastics Processors

Your market share is more easily determined than most. Any geographic region has a limited number of reclaiming and processing facilities. You need to know their number, the type of processing they undertake, and the nature of their product. Then you need to analyze the number

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and location of end-users. On that basis, you can determine your own product or products and the share of the total market you can expect.

Plastics End-Users

Your market share depends on the types of products which can be made using your recycled product, and the cost and quality of your product when compared to products made with virgin feedstocks. For example, plastic lumber competes against virgin wood products. This is essentially a retailing problem—increasing your market share by finding the way to make customers choose a product made of recycled products.

Many businesses are interested in buying recycled products but do not know where to find them. Therefore, the end-user has to educate businesses about the availability, quality and cost of their recycled-content products, which means that your business plan should emphasize a sales plan defining how you will analyze and approach your customers in detail.

A good potential market for recycled products is state and local government, and you should investigate whether regulations give some agencies a requirement or incentive to buy recycled products. Some states list interested agencies on the one hand and suppliers on the other. At the state level, your first source of information should be the Department of Environmental Protection, and at the municipal or county level the contact should be the city clerk or county auditor (or equivalent).

Finally, the market for recycled plastics is international. Most states have established an agency designed to increase export sales, and the Environmental Protection Agency contains an Office of International Activities which publishes a list of companies interested in exporting.

Summary

In determining your potential market, studying your competition, and working out your market-share, the American Plastics Council suggests that you need to answer certain questions.[3]

- If plastics currently are collected for recycling, where are they going? What plastics are being accepted at the various phases of the recycling process? Is there an opportunity to broaden the list of marketable materials?
- Are there contracts which commit your geographic area to a particular recycling process, and can you compete with those contracts?
- Can the existing infrastructure for handling and reclaiming absorb more plastics than currently are collected?
- In what ways can the materials moving from one stage of the process to the next be upgraded in terms of quality and convenience (e.g. by sorting or baling)?
- What are the advantages over competitors you could create in your business, such as a high price paid for materials, less-stringent delivery specifications, shorter hauling distance and better location, greater variety of materials accepted or produced, etc.?

> The same manual contains worksheets for estimating:
> ✓ the plastics feedstock in the waste stream for your area, and
> ✓ the plastics feedstock from municipal programs.
> These worksheets, and the warnings which accompany them, are invaluable to all phases of the plastics recycling industry.

The manual of the Minnesota Office of Environmental Assistance has the following advice: "Because markets are forever changing and are subject to local, national, and global forces, it is in the best interest of businesses to keep up on current market prices and trends."

[3] These questions were adapted from *How to Develop a Viable Post-Consumer Plastics Handling Business,* (p.32)

Sources for this information are available within most states. The annual January issue of Modern Plastic (609-426-7070) provides annual figures on U. S. Sales of virgin resin and post-consumer plastic recyclate. The American Plastics Exchange, Inc. maintains a database of resin and machinery for sale or wanted (612-544-1100). The magazine, Resource Recycling (503-227-1319), can provide a directory of plastics processors state by state and according to resin type along with a list of plastic recycling equipment and manufacturers.

Market Share: SPECIFICS FOR GLASS RECYCLERS

Once again, the advice provided above to plastics recyclers applies, for the most part, to cullet recyclers. In particular, we recommend your thoughtful attention to the questions posed on the previous page.

Your market share will depend primarily on the arrangements you are able to make with end-users and perhaps with competitors/allies. If you see yourself as a small supplier to the next component of the recycling process, then you must be able to describe your arrangement in detail.

In this section of your business plan, you should specify not so much the possibilities and the potentials but contingent arrangements, including contracts. In fact, your business — at least in part — already exists on paper before you seek the capital to make it a reality.

Market Share: SPECIFICS FOR RUBBER RECYCLERS

The advice given to plastics recyclers in the preceding pages applies to rubber recyclers, with the usual cautions about paying close attention to local supplies and regulations.

The sources given in the previous chapter should have enabled you to be very specific about your market and your competition. Therefore, your definition of the market segment available to you will lead almost immediately to the set of financial projections in your business plan which you will soon prepare.

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Chapter Six: LOCATION

The location of your business is critical to its eventual success or failure. You must make a careful choice based on knowledge of other locations—those of:

- your suppliers,
- your customers,
- your competitors.

Your choice should also be strongly influenced by costs and regulations. Your business plan should describe your choice of location in these terms, emphasizing attention to costs and to the section of your business plan on the market. However, it does not need to be more than a few pages in length and may be combined with the following chapter on "Facilities".

> Most new businesses choose to buy or lease an existing facility rather than building a new facility, thus saving a great amount of working capital.

In choosing a location, do not assume that because your competitors selected a particular type of location, you should make a similar decision. As times change, so do the ways in which products or services can be delivered most efficiently. For example, before recycling was enforced by deposits on drink containers, in order to recycle plastic, aluminum, and glass items, people had to take them to some particular location (usually near the community landfill). For this reason, these items were seldom recycled. Now, because deposits give customers the added incentive to recycle, some communities have several choices of where they may redeem their bottles and cans. Since the same price is paid per container at all sites, location becomes a key issue for a successful business.

Consider the following three factors and their potential effect on a location decision:

1. **Telecommunications/computer technologies:** Cellular telephones, fax modems, or on-line services have an impact on your choice of location, depending on the type of products or services you intend to provide. For example, if you enter the plastics brokerage arena, your location will not depend on truck routes, facility requirements, or end-user access. It is certainly possible to locate part of your office operations separately from your manufacturing operations, which allows you to avoid costs, traffic problems and zoning regulations.

2. **Co-location:** As the term suggests, co-location refers to two or more businesses sharing the same location. Generally, the businesses that enter such arrangements are complementary, such as a bottle-cleaning business and the producer of the cleaning agent. Co-location arrangements serve two purposes: First, they can significantly reduce overhead. Second, they can increase sales potential because there is likely to be an overlap of customers. In addition, many specialized recycling businesses develop out of general waste-handling businesses because there are advantages to keeping the facilities in the same location.

3. **Dispersion:** Instead of locating all operations under one roof, many businesses now locate semi-autonomous operations in different buildings at different locations. This can lower costs and add to customer convenience. Does your sales force or office staff have to operate out of your processing facility? Does the location to which suppliers deliver your feedstock have to be right at your production line? In the recycling business, the concept of "depots" for delivery or storage has become widespread.

THE BASICS

Your business will probably be located at an industrial facility. Recycling businesses of all kinds must provide for:

- acceptance and storage of incoming goods;
- smooth flow of materials and traffic;
- efficient operations;
- ongoing maintenance and servicing of equipment;
- business administration; and
- value-added materials handling.

In thinking about a location, you should consult commercial real estate brokers who can provide you with information about alternative sites. Good brokers can help you improve your business and lower your costs by offering a variety of sites. They can also help substantiate your business plan by providing realistic figures concerning local rents, availability of buildings, site improvements, the need to construct or remodel, etc.

Costs

As you compare location alternatives, estimate costs carefully. Remember that your expenses include not only your monthly lease payments but also leasehold improvements, lease and security deposits, utilities, and other possible assessments. One way to determine whether you are paying too much for your location is to compare your costs with those of other, similar businesses. You can look up your business-type and compare, on a percentage of sales basis, what similar businesses pay in the most recent issue of RMA Annual Statement Studies.

Proximity to Customers

Evaluate the importance of locating close to customers. This factor will vary significantly, depending on your type of business. Plastic, in particular, has a high volume-to-weight ratio making transportation costs a key issue. For example, most plastics handlers receive material from within a 50-mile radius of their facility. Beyond this distance, transportation is no longer cost-effective. On the other hand, if your customers are spread out over a large area, you may consider utilizing a system of transfer stations where you can collect material and even pre-process it before forwarding it to your main facility in bulk. You can then locate your facility close to rail or interstate access points. Costs and proximity are directly related. Don't pay the premium for a central location or even an industrial park unless you find it necessary.

Traffic Patterns

Whether foot or vehicular traffic is important to sustain your business, it is necessary to determine what the volume is, and at what times. Your state Department of Transportation is an excellent source for traffic counts, but, in general, the data will need further analysis.

Zoning Requirements

Be sure to check with local government authorities to ensure that the location you are considering is zoned for your particular type of business. You may start small, then, with a burgeoning business, find yourself forced to seek an alternate location, possibly losing a sizable portion of your clientele in the process adding to the cost of relocation.

Transportation Access

If you operate a manufacturing facility, easy access via truck is a necessity — access not just to your site but to its vicinity. Are the roadways surrounding your business zoned for the weight of your commercial trucks? Are there bridges, tunnels, or intersections that might hinder a steady flow to your facility? If so, are there alternate routes? Do you have easy access to the Interstate highway network?

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Permits and Licenses

Make a list of all the permits and licenses that are required for your particular business. Not only are there some that might surprise you, they may also differ from location to location. For example, if you have a storefront location, you may find that there are local regulations restricting its size and what it can be used for. In addition, certain types of businesses, such as those dealing with food and toxic waste, need both state and federal permits. If you have any doubt, the best place to check is with your local Small Business Development Center, Chamber of Commerce, trade association, or appropriate state agency.

> You cannot trust any single government agency to provide you with all the information about permits you will need. State and municipal agencies often do not know each other's requirements, and some agencies do not know the requirements of other agencies at the same level of government.

The regulations for facilities which handle solid wastes have been tightening over the past few years. Solid wastes affect, air, water and land use. The process of identifying and obtaining the necessary permits is expensive and time-consuming—more so for a processor than for a handler or collector. Many such businesses hire a consultant familiar with the entire permit process to prepare, file, and expedite applications.

Expansion

Will the location accommodate your business two, three, or five years down the road, relative to your growth projections? If not, where could you potentially relocate, and how would such a move affect your customer base?

PITFALLS

Underestimated Costs

Identify and project accurately all relevant (often indirect) costs associated with each location. For example, if you need to travel from your location to provide customer services, the costs incurred for you and your crew need to be considered, versus the costs from other locations.

Location Costs Too High

If your location costs, as a percentage of sales, are significantly higher than industry averages, evaluate the situation carefully. Local market conditions could justify this, and your higher overhead will have a direct effect on profitability.

Better Locations Available

Don't assume that you have to rent any one specific type of location for your business. Evaluate each alternative to ensure that you are getting not only an economical situation that you can afford but also the location that best suits your business in terms of image, efficiency, and cost-effectiveness.

Location: SPECIFICS FOR PLASTICS RECYCLERS

Plastics Collectors

Collection options include:

- various curbside collection programs;
- drop-off programs;
- collection bins; and
- large-customer servicing.

All these options require the use of large vehicles, and **the primary determinant of the cost of using large vehicles is off-route time.** Some studies have shown that approximately 32 percent of a vehicle's workday is spent off-route, and your goal should be to reduce that percentage greatly. You should also have a regular, pre-determined maintenance schedule (more off-road time!) for every vehicle, because regular maintenance is another large source of savings.

Desirably, your collecting facility should be located near the sources of scrap plastics to minimize transit times. Your site should also be designed to allow rapid turnaround time when collection vehicles deliver to your facility. Some collection companies use intermediate delivery sites, particularly if the geographical area for collection is large. You should also take into account proximity to your handling facility. Many collectors and handlers share a site, though there are disadvantages in terms of scheduling.

Plastics Handlers

Here again, your location should be as close as possible both to the collectors and to the processors, reducing the transportation costs that can be the significant determinant in a handler's profit picture. You should pay close attention to having good access to major transportation routes and to the design of your facility to allow for quick delivery of your feedstock. You should also take into account the disposal of your own waste in terms of both unusable materials after the sorting of the recyclable materials and residue after their processing.

Plastics Processors

Again, you must consider the location of the collectors and handlers with whom you do business, as well as the end-users. Many handlers and processors share a location, though their operations remain separate.

Processors are more likely to be affected by environmental regulations than collectors and handlers because their operations generate emissions and waste products. The process of acquiring permits will cost more and take longer, **regardless of the volume of materials you process.**

Plastics End-Users

Your location is dictated by the same factors as any other industry—it should provide access to your market. Note, however, that many businesses which generate substantial scrap plastic choose to locate their own processing plant at the same site as their factory, thus eliminating the major part of transportation costs. For smaller users, the factors determining the cost of transportation will be the same as those for any other feedstocks. You can therefore make a direct comparison of costs.

One competitive advantage for the end-user may be the price of the raw material (feedstock) — if the quantity demand is sufficient, the end-user may consider a co-location with the reclamation facility or a nearby location.

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Location: SPECIFICS FOR GLASS RECYCLERS

Glass Collectors

Most of the information provided to plastics recyclers also applies to glass recyclers. However, **it is crucial that glass collectors and cullet processors see their business location as being in three places:**

- at curbside;
- in the collecting vehicle; and
- at the processing facility.

To understand this statement, you should read in detail a report summarized in Resource Recycling (July, 1995, available in reprint). The study showed that the manner in which cullet is collected is the beginning of its processing, and that different methods of collecting produced widely different recovery rates. **The highest recovery rates came by means of a curbside sorting system**. Curbside-sorted collection produced recovery rates of more than 90 percent for all three colors of glass, whereas commingled collection produced rates of 50 to 70 percent. The key element in the difference often proved to be the availability of different equipment.

In one example, the glass was separated into three colors by the collector at curbside and placed in different bins inside the collection truck. In another example, the compartments of the collection trucks were altered by stringing a series of wire cables throughout. This proved the most effective and least expensive means of reducing glass breakage at the collection stage — modifying one truck costs only $250.

Glass Handlers

In the same study, a handler experiencing high breakage rates (which makes the manual sorting of cullet very difficult) used five modifications of the collection and handling process and increased their recovery rate by 15 percent. The modifications included such matters as modifying the tipping angle at which commingled recyclables were dumped, constructing a ramp to reduce the fall of the glass, installing a rubber chute to break the two-foot fall between the in-feed belt and the trommel, and instructing the loader to work more slowly.[4]

Glass Processors

Clearly, your ability to receive and produce high-quality cullet begins with the collectors and handlers. Your "location" begins at the curbside. Accordingly, you should investigate contractual technical specifications with these businesses and assist them with information about equipment. The effect of this cooperation is to raise the recovery rate by as much as a third and to reduce your costs in disposing the residue in landfills.

The other factor determining your location is the cost of transporting the cullet that is your final product. Fifteen years ago, it was common for container manufacturers to have their own cullet processing plant on the manufacturing site. In the 1990's, this situation changed dramatically. Numerous container manufacturers signed supply agreements with third-party processors and then shut down their own on-site cullet processing facilities. The result was a rapid expansion in the number of cullet processors. In this situation, the cost of transporting processed cullet to the end-user (assuming a container-manufacturer) becomes a major competitive factor.

Many cullet processors are solving the problem by growing in size so that they can negotiate contracts with the end-users. This can create the problem of inadequate or variable supply if their collection-area is too small. Thus, processors are also expanding their collection areas. Again, location becomes a significant factor, because the processor must locate its plant carefully in the expanded collection-area or use techniques such as dispersion, storage depots and off-site sorting and crushing.

[4] This study was conducted jointly by the Solid Waste Association of North America, and the Glass Packaging Institute under the auspices of EPA's *Municipal Solid Waste Innovative Technologies Program*.

Location: SPECIFICS FOR SCRAP TIRE RECYCLERS

The main problem with scrap tires is bulk, which means the need to pay close attention to haulage scheduling and to storage facilities of different types at your site. Especially if you engage in sorting because more space will be needed for both the sorted and unsorted product. The main method for reducing the need for storage is the scheduling of deliveries.

If you process scrap tires, you will also need to coordinate your production line (the equipment) and its maintenance with delivery schedules. A processing site can be quickly overwhelmed if deliveries continue when production falters. You should seek the advice of the equipment manufacturers in this matter since they have seen a large variety of processing sites and problems.

There is a danger of fire among stacked tires, and they are regarded as unsightly. Some processing methods create emissions. Therefore, you should check with local and state authorities very carefully when choosing a location. Regulations are likely to have as big an impact on your choice of location as the proximity to transportation routes and customers. The Scrap Tire Management Council can provide information on your options. The Institute for Scrap Recycling Industries, Inc. also has several relevant publications.

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Location: A Real World Example (a processing plant)

The basic facility would require approximately 40,000 square feet. Of the square footage, approximately 2,500 square feet will provide management office space. Additional elements of location and facility requirements include:

Access:	Proximity to a major roadway for transportation access. Ample shipping and receiving bays
Ventilation:	Appropriate ventilation for fumes and other airborne contaminants
Electrical:	Adequate electrical service (voltage)
Structure:	High ceilings, proper lighting
Labor:	Access to an unskilled labor force.

Limited spacing will be required for storage due to the just-in-time inventory control approach. This would enable us to devote a majority of facility resources to production while reserving some space for growth.

The financial projections provided within this plan allow for a $3.50 per square foot price.

Source: Nevada Small Business Development Center

Chapter Seven: FACILITIES

We assume in this chapter that your facility is best described as a "manufacturing" facility, in that it accepts one kind of product, runs it through a production line, and generates another kind of product. In this section, your business plan should include a description of your building and your production line, including as precise information as you can provide concerning the equipment it will contain.

Your description of your facilities may be combined with the section on "Location". Location choices will affect the kind of facility you choose, whether you lease, buy or build new. The cost of your facilities (including equipment) will come second only to labor costs in your budget. Therefore, you should study several combinations of location and facility in terms of their influence on your costs and be prepared to justify your final choice over other options (*The Materials Recovery and Recycling Yearbook* is a directory that provides an overview of the design and operation of MRFs in the United States. You can obtain a copy by calling (203) 226-3228).

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Site Requirements

Your materials will be brought to you by truck, and your product will go out by truck. Most recycling facilities need a location accessible by major road and rail arteries. You will also need access to electrical and water utilities—three-phase power, water, and wastewater discharge options.

Many facilities locate themselves in existing industrial parks where these services have already been attended to. However, an industrial park may prove expensive or impossible because of your need for space. Any materials recycling facility needs extra space for the complex process of receiving, storing and shipping materials. This means you must pay attention to the needs of vehicular traffic (queuing, weighing, dumping, moving on site). Remember, when considering an industrial park, make sure that your building does not have to compete with other businesses for the same space.

If you store materials outside, you must consider permits and their effect on land use. Drainage, visual impact, geological conditions and slopes can also impact your choice of site. In sum, you **should seek engineering and design advice to choose and construct or remodel a trouble-free facility** rather than "making do" or choosing a facility solely because of its location near customers.

Buildings and Equipment

Your facility will basically consist of a production line with facilities for receiving raw materials and shipping out manufactured product along with temporary storage locations. The building must be designed to respond to high volumes of vehicular traffic, and you must decide between drive-in or ramp doors. The American Plastics Council's *How to Develop a Viable Post-Consumer Plastics Handling Business* contains valuable information on these matters (pp. 43-66).

Again, it will be cost-effective to hire a design engineering consultant for any large-scale facility. This is also one of the many points at which you must examine the comparative costs of leasing or buying or building a new facility.

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Building Requirements[5]

You will have to build or alter an existing building to meet your requirements for the traffic flow and processing equipment. Things to consider are ceiling height, weight load supported by the floor, ventilation, etc. Most lenders are going to require preliminary site plans and improvement quotations. Any real estate purchase will require an appraisal at current value and at value after completion of any construction. At very least, you will need to substantiate a cost per foot estimate on construction.

Eventually, your business plan should include a floor plan for your facility, along with a map that shows the street location, proximity to competitors, suppliers, complementary businesses, major thoroughfares, and public transportation.

The design of the building will depend on:

- the volume of material to be handled;
- the types of material to be handled;
- the degree and nature of processing that is to take place;
- the types of vehicles used to deliver feedstock to the facility;
- the methods used to transport products from the facility.

A *receiving area* to accept and hold materials awaiting processing will be chosen according to the frequency and size of deliveries, as well as the equipment which makes the deliveries. Are materials dumped or tipped? Inside or outside? Can vehicles enter and unload and exit without delaying each other? How do you move materials once they have been unloaded? How do you segregate materials by *source*, as well as by type? Will the materials be pushed from the truck onto a conveyor or lifted onto it?

A *weighing area* will dictate the flow of trucks on and off site. Accurate weighing of materials being delivered *and* shipped will be a critical cost factor.

A *production area* may consist of one production line or several streams. How will they be designed so as to provide for both efficiency and the safety of workers?

A *delivery area* must store and ship finished product. What is the product? Does it require a loading dock or a ramp? How is this area related to the weighing area? Are there special security concerns or safety considerations?

Equipment Requirements

Lenders will require detailed equipment listings with model numbers and price quotations. It is quite possible in the recycling industry that some equipment will be custom-built, but price quotations will still be necessary. At very least, you will have to substantiate an estimated equipment cost by category of equipment being purchased or leased.

Materials handling equipment includes conveyors, forklift trucks, front-end loaders and storage containers (bins, boxes or heavy wire cages). If the facility handles and/or sorts several different types of materials, you will need extra storage. Poor scheduling of deliveries also requires extra handling and storage equipment.

Sorting equipment will vary, of course, according to what you are receiving and producing. Has the feedstock been sorted before it is delivered to you? If so, is it fully sorted? Determining who performs each sorting step has great impact on the building and equipment of collectors, handlers and processors, so cooperation between the various component businesses can help lower the expenses of any recycling operation. A quick and successful sorting operation also depends on the amount of flexibility it allows for changes in market specifications.

[5] The following requirements have been adapted from the American Plastics Council's *How to Develop a Viable Post-Consumer Plastics Handling Business*, with supplements from other materials.

Processing equipment now includes a large variety of machines, and, depending on your reason for seeking financial support, before completing your business plan you may need to explore equipment choices in detail. Your choices in this area reveal your knowledge of your business and create a crucial element of your business plan, especially since they represent capital or up-front expenditures.

Equipment requirements vary according to the material being processed, the product, the volume of materials, the size of the business and the money available. There is nowhere you can go and simply say, "Give me the plastics, or glass, or rubber recycling package." However, in all three feedstocks, it is possible to buy or lease a fully installed production line that will take care of your major requirements. Certain companies specialize in providing the equipment for customary processes. You can also purchase used equipment.

Resource Recycling publishes an annual *Equipment Directory,* an excellent source of information for recycling businesses (503-227-1319). Many of the trade associations and institutes listed in Section Two of this guide (i.e. the Institute of Recycling Industries and the National Association for Plastic Container Recyclers) provide expertise and technical assistance in the area of recycling equipment (**Recycler's World** also offers good information about recycling equipment. It has a Helpline (519) 767-2913 and is on the Net at www.recycle.net).

Storage Requirements

Storage has proven more important to the success of recycling operations than was originally expected because delivery schedules, equipment breakdowns and changes in the market all cause increased demand for storage.

There are some rules of thumb. Storage includes materials awaiting processing and those awaiting shipment, and provisions for waste or rejects. On-site storage allows economies of scale by increasing the volume per shipment. Remote storage, however, may be more economical because it lowers transportation costs or simplifies scheduling. Insufficient storage can cause the entire process to become inefficient, unsafe and unprofitable. Enough storage must exist to allow for delays in processing caused by breakdowns or scheduled maintenance.

Health and Safety Requirements

Your business plan should outline your health and safety plan. All recycling businesses are labor intensive, and one of their highest costs is labor turnover. It may be wise to have an industrial hygienist and safety engineer prepare your plan, paying special attention to the well-being of employees.

Safety precautions include conveyor stop buttons, showers and chemical washes, guards on mechanical equipment, eye and ear protection, gloves, dust masks, protective footwear and hard hats. Fire suppression equipment is required, as is special ventilation. The control of dirt, odor and noise can make a great difference to employees, as can adequate break-rooms and plenty of surrounding work area. You must also anticipate work-related injuries—such as the explosion of a container of flammable liquid or the presence of a hazardous waste (ISRI distributes important safety materials, ranging from a 700-page *Safety Reference Manual* to videos and posters for workers).

Federal Agencies

Two federal agencies have special responsibilities regarding manufacturing. They are:

- the Occupational Safety and Health Administration (OSHA), whose mission is to "assure, as far as possible, every working man and woman in the nation safe and healthful working conditions and to preserve our human resources."

- the Environmental Protection Agency (EPA), whose mission is to control and abate pollution in air, water and waste.

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You should talk to both agencies well in advance of writing your business plan. First, you can learn the category to which your business belongs and therefore which regulations apply and which do not. Second, you can lower the cost of any regulations by building them into your business in the first place. The once-traditional antagonism between these agencies and small business has diminished during recent years. In this regard, three points need to be made:

- ✓ There is a general absence of federal standards and guidelines in the area of recycling facilities. The regulations governing solid waste management vary from state to state, and you will find your state environmental agency exercises more authority than the federal agencies. However, the federal agencies are often very helpful in advising you how to avoid problems and in supplying information and advice.

- ✓ Most disputes about regulations arise because of required changes to facilities opened without checking in advance with the agencies. In fact, most small businesses report not finding regulatory requirements burdensome when they know about them in advance.

- ✓ As knowledge increases, federal and state requirements and guidelines change. This means that "compliance" for a small business is an ongoing process rather than a one-time event. (The Institute for Scrap Recycling Industries has useful resources for understanding environmental compliance requirements, hazardous waste management, safe operations and OSHA compliance. Consult them in advance.)

PITFALLS

The Wrong Building

Choosing the right building is one of your most crucial choices. You can lease or buy an existing building, or you can build a new facility. Many factors will influence your choice. This is an area in which to seek expert help.

Failing to Match Facility and Equipment to Operations

Buying too much equipment or too little, not having enough space, paying too much for space or failing to allow for flexibility in your operations, can cause recycling business problems. You have to match your building and equipment very carefully to the nature and size of your operations.

Underestimating Costs

A pre-engineered building may cost as little as $8.00 per square foot, and a custom-designed building 50 times that amount. The Plastics Council makes the following observation: "Excluding the cost of the land and equipment, a good rule of thumb for estimating facility costs is $80 to $100 per square foot." The National Solid Wastes Management Association, in 1992, reported that recycling businesses spent an average of 16.7% of their costs on building rental/amortization but the range that created the average was large — from 7.5% to 34.4%.[6]

[6] NSWMA, *The Cost to Recycle at a Materials Recovery Facility*, p. 9.

Facilities: SPECIFICS FOR PLASTICS RECYCLERS

Plastics Collectors

Your primary need is to arrange both delivery schedules and storage arrangements with the handling facility. Concerning delivery schedules, your main cost will be the time your vehicles are off-route. That is, you do not want them waiting in line at a handling facility, because this affects your need for storage. It may be to your advantage to have temporary storage facilities which act as holding-depots between your collection and your delivery schedules. Note that the sorting of plastics is increasingly done by collectors rather than handlers. That is, the handler accepts only selected kinds of plastic. This, of course, will change your facilities considerably.

Plastics Handlers

Your first choice is whether to receive mixed or sorted plastics. Your second choice is whether to aggregate and bale or to granulate your product for shipment. In both cases, you will have to examine the capabilities and requirements of the collectors and processors in your area to determine the best choice.

The choice will determine the nature of your facility. For example, will you handle one, two or more resins? Will you then use manual or automated sorting? Will you bale or granulate your product? Answering these questions will involve you in a series of other choices about equipment and the design of your facility.

Remember that a major cost in plastics recycling is the low weight-to-volume ratio of plastics. Your goal is to reduce the volume of plastics prior to shipping or long-term storage. The shipment of waste and rejects can also be a significant cost.

Plastics Processors

Your major decision concerns the type(s) of resin you will process. This decision will allow you to formulate choices of facility and equipment as well as your arrangements with handlers and end-users. Your primary concern will be the quality of both supplies and products because you will have strict standards for your end-products. There is a growing tendency for processors to require high-quality standards for incoming supplies concerning:

- contamination;
- bale characteristics; and
- degradation, especially due to ultra-violet exposure.

Concerning equipment, you will need to fit your investment to your operation, and we strongly recommend consultation with industry sources and printed materials mentioned previously. New technology is constantly being invented, and adaptations of old technology so as to meet particular needs are very frequent. In other words, this is an area where the deepest research will pay the best dividends.

> You cannot trust any single government agency to provide you with all the information about permits you will need. State and municipal agencies often do not know each other's requirements, and some agencies do not know the requirements of other agencies at the same level of government.

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Facilities: SPECIFICS FOR GLASS RECYCLERS

Your special need is to think of your facility as a "process" involving several "functions." Processing begins at the curbside, continues during haulage, dominates the delivery process and then continues at the processing facility.

The major functions which you must perform include:

- collecting;
- sorting;
- avoiding breakage;
- reducing residue;
- removing contaminants;
- crushing; and
- dispersal of product and residue.

Resource Recycling magazine states that a typical cullet processing plant:

- occupies a 10,000 to 20,000 square feet building;
- produces 50,000 tons per year on a one-shift basis;
- requires as much as $800,000 in equipment; and
- requires as much as another $1 million for land, building, scales, loaders, etc.

Facilities: SPECIFICS FOR SCRAP TIRE RECYCLERS

The variety of technology and facilities that exists in the tire recycling business is too great for this guide to discuss in detail, and the nature of your facility depends entirely on the nature of your business. Information given in previous chapters, however, should enable you to discuss your facility needs knowledgeably with those who have experience in your chosen area. The Rubber Manufacturers Association, the International Tire and Rubber Association and the Scrap Tire Management Council will also give specific help. The Resource Directory in Section Three provides more information.

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Facilities Description: A Real-World Example (from a company seeking to expand production)

"At present, we perform mixing and packaging by hand. We use primitive mixing vessels for bulk items, and we hand-weigh and hand-heatseal the packet items, using three mixing vessels, two scales, a computerized filling auger and a heat-seal machine. Liquid products are all mixed and packaged manually. Production can be performed only on one item at a time.

1. First, we aim to complete the renovations which were named Phase II construction in our original plan. These include renovating the restrooms, installing carpeting or floor tile throughout the 4100 square feet of office space, and acquiring furniture for the executive and secretarial offices, the secretarial pool area, the main entrance foyer and the kitchen.

2. The financial pages specify the upgrades needed for our computers and telephone system.

3. To meet our packaging needs, we will require more liquid-filling equipment. This will consist of a conveyor leading to a six diving-nozzle filler, proceeding to a capper and an automatic adhesive labeler, ending at the final holding conveyor. The remainder of the packaging and sealing process will remain manual.

4. Bulk products will be dispensed into our standard 25, 50 or 100 pound containers. The packet process will consist of a fully-automated packaging machine that will weigh the product, dispense it into packets, and heat-seal the packets. With this machine, production will increase to 1,080 packets (135 lbs) per hour.

5. Within the next three years, we will acquire cultivation equipment: one 1-liter fermentator, one 10-liter fermentator and three 140-liter fermentators. These must be synchronized and computerized. One hundred pounds of bacteria will be produced every 48 hours, which, after 22 days, will enable a daily production of raw bacteria of 11,000 pounds.

5. The wet bacteria will then be moved to the drying area, where a Suspension Dryer will be located. This type of dryer is necessary to prevent burning of the bacteria. It is superior to both Heat Drying and Freeze Drying.

6. The newly dried bacteria is then milled, ground or chopped into a #15 mesh. This consistency is recommended for biodegradation. It is also easier to store and mix in this state.

7. After the bacteria has been dried and milled, the product is stored in marked containers until blending is required. A ribbon mixer is the most desirable equipment for blending. For example, if a ten-strain bacterium is required, the mixer will enable us to produce a batch of 500 or 1000 pounds in a short time. Damage to the bacteria will be minimal."

Source: New York State Small Business Development Center.

Chapter Eight: PROMOTION

Promotion is any form of communication that:

- informs your potential customers that you have a product or service,
- convinces them that this product or service meets their needs, and
- persuades them to purchase it.

Promotion may also be a matter of generally promoting your company. This chapter covers both matters.

Collectors, handlers and processors may not need a special section of their business plan devoted to promotion, though it must be mentioned. It may be included in either your management or your marketing section, depending on the type of promotion you plan.

THE BASICS

Identifying Your Customers

The customers of collectors, handlers and processors are the other components of the recycling industry, especially the end-users. An exception is when a collection program is trying to create or increase the proportion of users among the general public.

Local, state and regional governments are also the "customers" of the entire recycling industry. Government needs to be kept systematically informed about industry developments.

End-users deal with the general public, with the retail industry, or with the special public of manufacturers who may use their product. A special segment of the public is "green-oriented," or voluntarily committed to recycling. Industry-wide promotion campaigns can increase the size of this segment and make your supplies and products easier to procure.

Choosing a Promotion Method

The best promotion methods for the recycling industry are:

- meeting quality specifications;
- emphasizing the use of recyclable feedstock;
- establishing good relationships with other businesses in the industry; and
- advertising within the trade at shows and in publications.

Only the end-user is likely to use direct advertising to the public.

Remember: Your recycling industry may be regional, national and international. Once your business is established, you should spend considerable time examining trade periodicals and Websites to determine whether they are appropriate for your business.

Promotional Strategy

The first step in promoting your company is to identify your customers. The second is to develop a promotional strategy and express it in the form of a list of goals you expect to achieve. Objectives should be in quantitative terms whenever possible. Third, each aspect of your promotional campaign should be measured against these objectives. Evaluating the effectiveness of the various components of your promotional strategy is an important but often difficult task.

> Again, remember that there may be two "customers" for you: your suppliers and the end-users for your finished product. Local and state government may form a third "customer." You may need different promotional strategies for each "customer."

A comprehensive statement of your goals should also include the following.

1. Establish and/or Expand Your Customer Base
How does the proposed strategy ensure that potential customers will become aware of your product or service? How many new customers will be reached?

2. Differentiate Your Product or Service
How does the promotional activity make your product or service look unique, different from that offered by your competitors? Emphasize factors such as price, hours of operation, and personalized customer service. Emphasize the use of 100% recycled content in your products. Use terms such as "green," or "environmentally friendly." Emphasize decreased cost if you can, since this is often the determinant of a customer's choice.

3. Influence People to Become Customers
Does the promotional activity provide a specific, identifiable incentive for the prospective customer to purchase?

4. Build Goodwill
Does this promotional activity build your reputation as a good citizen and establish a positive image for your business? Contributions such as support of community fund-raising activities and buying Little League uniforms for local teams fall into this category. You also need to build goodwill with the other components of the recycling industry (ISRI publishes several items very useful in public relations, including leaflets, pamphlets, videos, materials for K-3 children, and spots designed for local television).

The Promotional Mix

Most recycling industries do not need to market to the general public. The exception, of course, consists of end-users marketing a finished product to the public and to sellers. If you are an end-user, you should consult a professional. Most promotional efforts exploit a mixture of media and methods, and you need to know the advantages and disadvantages of the various methods, and you need to evaluate their degree of success.

In general, the promotional mix includes five basic ways to communicate about your products or services or company:

- ✓ advertising,
- ✓ sales promotion,
- ✓ personal selling,
- ✓ publicity, and
- ✓ public relations.

The promotional mix is a blend of these options. Most recycling industries tend to emphasize personal selling and public relations. Your choice depends on factors such as available funds, competition, and stage of your business life cycle. Your strategy should not be created by happenstance. It should result from an analysis of your alternatives, weighed against your promotional goals. **For details on how to use each of the above elements, see *The Service Business Planning Guide* (Inc. magazine, 1996).**

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Electronic Commerce

Selling products or services over the Internet, particularly the World Wide Web, is becoming a cost-effective way to reach a large number of potential clients. Any plans you make to use electronic methods should appear in your business plan. The Resource Directory of this guide will give you some idea of the electronic opportunities available. The Internet and Web are especially useful if you seek national and international customers or you specialize in a rare product or you generate a high volume of product.

Recycler's World has a Website directory of resources for recyclers (http://www.recycle.net/recycle/index/html) which combines industry information with advertising space for businesses involved in recycling. The Internet has given many companies such as Lakin General Corp., CRC, and Parma-Vinyl the ability to reach literally thousands of potential clients worldwide every day, around the clock, at low cost, and with little maintenance.

If you advertise on the Web, it is important to keep the customers' on-line time to a minimum—for instance, avoid graphics which take a lot of download time. Net customers can be very loyal if you provide them with a product or service which they can utilize for a small expenditure of time and money, such as a listing of products you offer, a price list for services, and hours of operation.

However, many effective Web pages are mainly educational in nature, with details of price-lists, etc. through hyperlinks. A Web page is an opportunity to teach the customer the benefits of using your products or allowing them to use their raw materials. Explain the benefits of your company in clear, pragmatic terms. And don't exaggerate—Web page readers are growing very skeptical about advertisers who claim too much.

Personal Selling

Customer solicitation via face-to-face sales calls or via telemarketing is the most powerful form of promotion. Its flexibility enables you to match the customer's needs to specific attributes of your product or service. For example, if your business customer is most interested in the way you package your processed plastics, you can focus your sales pitch on that feature, offering to refer him or her to other customers for references. You won't have to waste time describing product features that may not be important to that particular customer.

Personal selling is expensive since it includes the time you, the owner, spend on it. Good salespeople are expensive to hire, train, and retain. If you opt for personal selling, *be sure to budget plenty of time for it and include that time in your fiscal budget.* If you need salespeople, consider providing them with results-based compensation, in the form of commissions or a share of the equity, to offset costs.

> Much personal selling is done by senior management — dealing with major suppliers and customers, with government at all levels, and with trade or industry associations. Management should allocate time and acquire the skills needed for this task.

Sales Promotion

Sales promotion refers to activities such as displaying at trade shows. You should pay special attention to shows run for and by the recycling industry, but you may also identify or attract new customers by attending general industrial shows.

An invaluable resource is EPA's, *A Financing Guide for Recycling Businesses: Investment Forums, Meetings and Networks*. While this publication emphasizes entrepreneurial and investment meetings, it also identifies many other forums of general use.

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Public Relations

This is promotional communication designed to influence non-customer groups and it can be crucial. In the recycling business, for example, it pays to invest time in supporting environmental groups, the government, and the industry. You can work through community groups such as Kiwanis, or you can individualize. The goal is not "sell" but to let them understand the goals and significance of your business — that is, keep them informed!

The Institute for Scrap Recycling Industries, Inc. publishes a wide range of worthwhile materials, such as *A Public Relations Guidebook for the Scrap Recycling Industry* and a public relations magazine: Phoenix: Voice of the Scrap Recycling Industries. They include even an Earth Day Poster. These materials are particularly interesting because they promote the idea of recycling all "scrap," thus making your business part of the much larger picture.

Industry Advertising

All advertising should be targeted, which means that most of your advertising will be in publications directed at the recycling industry and those businesses which use the recycling industry. Specialty magazines (such as Plastics Business News or Scrap Tire News) tend to be highly focused, so there is little wasted circulation. The ads tend to have a long shelf-life, as most readers save the magazines for reference. Each time readers consult the magazine or show it to a friend, there is a high probability that they will see your ad again and again increasing the frequency of exposure. Specialty magazines tend to be far less expensive than their larger-circulation counterparts. However, there is usually a substantial time lag before getting your ad into print. Trade association publications and directories can also be an invaluable advertising mechanism.

Cooperative Advertising

One way to reduce advertising expenses is co-op advertising. This is very common, most often with suppliers who will share costs up to a certain dollar amount if you mention their products in your ad. In other cases, you can advertise with noncompetitive service providers. If you run a bottle redemption center for example, you may cooperatively advertise with a small corner market that is located near you.

Budgeting

How much money to spend on promotional activity poses a constant problem. Although there are no hard and fast rules, some guidelines suggest that up to 10% of net sales should be ear-marked for promotion during the first year. Comparisons can also be found by looking in the Society of the Plastic Industry's *Financial and Operating Ratios Survey for Plastic Processing Companies* to determine what similar businesses are spending as a percentage of sales. Remember that these figures will reflect average expenditures, and your expenses in the first year will probably be higher. Much of your costs may consist of time, especially the time of senior management.

> Remember that you must promote your product or service, and although promotion is expensive, it is as important as all other expenses. Don't look at it as money that you can afford to spend only after all other bills, including your salary, have been paid. If you do that, eventually all you will have are bills to pay.

Evaluate your promotional options relative to your competition and your customer base. Let the budget follow the plan. Use financial and trade association data to compare your proposed expenditures with other businesses in your industry, remembering that start-up and location factors will have a substantial effect on the numbers. Consult a local ad agency, a Small Business Development Center counselor, and other marketing professionals for advice.

PITFALLS

Common mistakes in developing and executing a promotional strategy include:

Underestimating Costs

Do not assume that you can leave promotional strategy at the bottom of your list in business planning. Make sure you have provided for an adequate budget allocation at the levels required to sustain your sales projections.

Lack of Differentiation

Use promotion to differentiate your products or services from those of your competitors. You do not want to stimulate a general need for this type of product or service with no compelling reason to purchase from you, thus creating a potential sale for your competitors.

SOME EXPERT ADVICE:

"Avoid mass promotion. We have some common material that we give each customer, but we also tailor each package to address their specific needs. It's more important to understand the markets you want to serve, and then go out and find the matches. Simply trying to reach as many people as possible is not cost-effective."

—Paul Stanfield, Operations Manager, ABCO Automation, Inc., Browns Summit, N.C.

Promotion: SPECIFICS FOR ALL RECYCLERS

All Collectors

Collectors should differentiate between the generators of solid waste — households, businesses, and municipalities — and then study each category separately. The goal is the same with all three: to promote environmental responsibility and the benefits of recycling, thus encouraging them to use collection systems. Advertising aimed at making the public aware of drop-off locations may also encourage more business, including the fact that various wastes — paper, plastics, glass and rubber — can be dropped off.

Note that good marketing already incorporates customers into the collecting process. Customers in many locations rinse and separate household recyclables. Experience has shown that collectors also need to advertise what can NOT be dropped off. Reinforcement by advertising may also increase the volume of materials provided by both residential and commercial customers, particularly if you can boast about the amounts collected and the community's savings in terms of both cost and landfill space.

New collection businesses need to mount a careful plan for reaching municipal governments and large corporations individually, emphasizing their differences from other collection businesses. This may be a matter of competitive bidding and contract negotiation, and if you plan to take this direction you should emphasize it in your business plan.

All Handlers

Handling facilities need to promote their capabilities to collectors and to the large generators of plastics, glass or rubber. This is individualized marketing. Handlers also need to seek out processing facilities and other users of the relevant feedstocks, identify all possible markets, then work with them as to quality, resin-type, glass-type, amounts, and cost. This is a crucial element in planning and operating your business, and it should be emphasized in your business plan. The American Plastics Council maintains a toll-free number (800-243-5790) to assist handlers in locating processors.

All Processors

Processors promote themselves on the one hand to collectors and on the other to end-users. This is often an individual matter, but they may also advertise their products in industry magazines and through trade associations and trade shows, depending on the geographical area they plan to serve. The Resource Directory lists several publications which identify the types of products and companies which use recycled feedstock.

All End-Users

Since the role of end-user is partly manufacturing and partly service, end-users are likely to use more forms of promotion than the other parts of the recycling industry. They should emphasize their use of recycled materials for environmental reasons, and they should promote comparisons in price and quality with products made of virgin feedstock. The use of recycled feedstock makes a business seem socially responsible, and if price and quality are comparable, then the recycler will become a more likely choice.

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Chapter Nine: FORMS OF OWNERSHIP

Your business plan should contain a clear statement of the legal form of ownership and, if there is anything unusual about the form you have chosen, the reason should be explained. Your legal form of ownership does not have to be presented in a separate section. *The form you selected and your rationale for it should be included in an Introduction or in the Management section.*

Prospective lenders will pay close attention to your form of ownership, and before committing yourself in a formal business plan, you should consult your loan source for their advice. This is also a matter where legal and accounting advice are essential.

> The first question to ask is not "How do I incorporate?" but rather, "What are my organizational options, and which one of them best meets my needs?"

To determine the most appropriate legal structure for your business, consider issues such as:

- capital requirements,
- business succession,
- legal liability,
- taxation,
- decision-making authority, and
- control.

Many of these issues will be addressed in various sections of your business plan, and no decisions should be made regarding ownership status until the appropriate sections of the plan have been completed.

Once you have gathered the relevant information, an attorney and an accountant should be consulted for advice on your options based on your particular situation. When selecting an attorney, choose one with experience in new business ventures. If you do not know a lawyer who fits your needs, ask a successful small-business owner, banker, or accountant for a referral. Each state also supports a Lawyer Referral Service, which can provide you with the name and location of a lawyer with the specialty you seek. In return for a listing with the service, many of these lawyers provide reduced rates or free initial meetings. Contact your state bar association for the phone number of your state's referral service. This is especially important when considering a franchised service business. Select an attorney who has extensive experience with this highly specialized form of business.

THE BASICS

There are three fundamental forms of ownership and their relative advantages and disadvantages. They include:

Sole Proprietorships

A sole proprietorship is a business that is owned and operated by one person. No legal distinction exists between you as an individual and your business entity. Many proprietorships function on a D.B.A. (doing business as) basis, such as a bottle redemption center owned by Bill Johnson, D.B.A. Billy's Bottle Barn. The D.B.A. status enables your business to use any name you like as long as it has been properly registered and does not infringe on someone else's trademark or trade name. The D.B.A. allows you to create a separate "image" for your business that is appropriate to the products or services you will provide, but which is not associated with your personal name.

Sole proprietorships have employees and some are quite large. Over 75% of all businesses operate as sole proprietorships, according to the U.S. Small Business Administration.

Advantages of Proprietorships

Costs. Start-up costs tend to be low. Once you've registered your name and secured any necessary licenses and permits, you'll be able to solicit your first customer.
Control. As a proprietor, you have complete control over all business decisions. You are free to hire and fire within the labor laws, and decisions can be made quickly.
Profits. The owner keeps all profits net of applicable federal, state, and local taxes.
Flexibility. You can decide to close your business as easily as you started it. There are no forms or costs other than to pay off your suppliers and any debt you may have incurred.

Disadvantages of Proprietorships

Unlimited liability. As a sole proprietor, you make all of your assets available to satisfy a creditor or a plaintiff in a legal action.
Limited availability of capital. All financing is based on your personal financial statement, business record, and character. You do not have the ability to raise equity.
Limited scope of management. As your business grows, it will probably need a professional management staff. It may be difficult to hire and retain this staff if, as a sole proprietor, you are unable to offer equity in lieu of salary.
Business life. If you become disabled, retire, or die, usually the business will cease to exist unless it is inherited by someone who is ready and able to continue it. This disadvantage has many implications, not the least of which is its effect on your customers. The more they depend on your products or services, the less comfortable they may become with your status as sole proprietor.

Partnerships

A partnership is a form of organization in which two or more individuals conduct business as co-owners. Partnerships range from two to 2,000 partners. As with a proprietorship, a partnership does not exist as a legal entity separate from its owners. There are two types: **general partnerships**, by far the most common form of partnership, and l**imited partnerships**. Partnerships can be formed by a simple handshake. However, a detailed partnership agreement, signed by all partners, is highly recommended.

Advantages of a General Partnership

Capital availability. Partners contribute capital to the business, providing for a potentially larger resource base than proprietorship offers. As the business grows and more partners are added, your capital base will expand.
Continuity. If one of the partners becomes disabled, retires, or dies, the business can continue, although a new partnership must be created.
Taxation. Partners can agree to divide profits any way they see fit, typically based on pro rata share of ownership. However, if there is no agreement, they share profits equally. Each partner pays income tax on his or her share of the profits at the individual's tax rate.
Growth potential. The ability to add new partners to the business provides the opportunity to recruit new expertise and build management infrastructure.

Disadvantages of a General Partnership

Liability. Generally each partner is responsible for the business debts of the partnership. There is unlimited joint liability, which may mean that if one partner has more substantial personal assets than the other(s), he or she could end up paying more to satisfy a debt or claim, even though the partnership shares were equal. This would occur, however, only after each partner's assets have been depleted.
Divided authority. In a partnership, by definition, you have less authority and control than in a proprietorship. As your business grows and partners are added, your authority and control may continue to be diluted.
Capital. Although capital becomes available as partners are added, you still do not have the ability to sell shares of your business to investors.

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Limited Partnership

Designed to attract investors, this type of partnership includes at least one general partner and a number of limited partners. The limited partners are passive investors. They have no say in management issues and no role in running the business. Their legal liability is limited to the amount they have invested in their partnership share. The laws regulating limited partnerships, including the number of limited partners you can have, vary from state to state, so you must check with your state attorney general's or secretary of state's office for the rules and regulations. Limited partners also get tax advantages, so consult with both your attorney and your accountant.

Corporations

A corporation is a state-chartered organization owned by shareholders. Shareholders elect a board of directors who are ultimately responsible for the management of the business. The corporation is a separate legal entity and, as such, it can make products and provide services to customers, own and sell property, sue, and be sued. The corporate form of ownership was developed to reduce the number of problems and disadvantages associated with partnerships and proprietorships.

To create a corporation, you must file a Certificate of Incorporation or Corporate Charter with the secretary of state's office. You can obtain information, including forms that may be required, by contacting that office in your state.

There are two forms of for-profit corporations: the C corporation, and the S corporation (so-called because it is defined under subchapter S of the Internal Revenue Code). Although for most start-ups, the S corporation, also known as the "Sub S," is the most appropriate, this is an area where professional advice from your lawyer and/or accountant is imperative.

Advantages of the C Corporation

Limited liability. Stockholders' liability is limited to the amount they have invested in the company. If the company fails, creditors cannot attach the personal assets of stockholders. There are exceptions to this in certain areas of taxation and fraud. If any corporation fails to pay withholding taxes or is involved in some type of fraudulent activity, the "corporate veil" can be pierced and individual stockholders may be held liable. Although this situation doesn't occur frequently, it is something you should be aware of, particularly in the S corporation.

Access to capital. The corporation can raise money directly through the sale of stock (equity) and bond (debt) offerings. The corporation can also borrow from commercial sources using corporate assets to secure a loan. However, with a small corporation, most commercial lenders will require the major stockholder(s) to guarantee the loan personally.

Perpetual life. Because the corporation is a separate legal entity, its existence will not be affected by the retirement, injury, or death of any stockholder. That is not to say that when the president of a closely-held company dies suddenly, the business won't have problems. One of the problems it won't have, however, is losing its legal identity and standing.

Transfer of ownership. The transfer of ownership in the corporation is simple. Ownership is determined by the number of shares owned, and these shares can be traded or sold, with little effort, assuming there is a market for them.

Ability to attract management. Often business growth is stymied in a proprietorship or partnership by the inability to attract specialized management expertise. It is difficult to build general management infrastructure because these organizations cannot pay market salaries or add additional partners. The corporation has the ability to use stock options as a powerful incentive to attract such managerial talent.

Disadvantages of the C Corporation

Taxation. Corporate income taxes are paid prior to the distribution of any dividends to stockholders. Once these dividends have been received, they are again taxed as part of the individual stockholder's income. In other words, the profits have been taxed twice.

Government regulation and paperwork. Certain government reports, forms, and other paperwork must be filed and/or monitored regularly. This places a particular burden on small enterprises and can create considerable hidden costs of doing business.

Costs. Paperwork and other initial costs, including legal and filing fees, can be significant. They can amount to thousands of dollars, depending on the complexity of the incorporation and the amount of work you are willing to do yourself.

The Subchapter S Corporation

Created in 1958, this has become a very popular form of ownership for small business. The Sub S retains most of the advantages of incorporation, including limited liability, but eliminates the disadvantage of double taxation. All profits, as in the partnership, are distributed on a pro rata basis to the stockholders and are then taxed at the individual's income tax rates.

Disadvantages of the S corporation include taxes on many fringe benefits; limits on retirement benefits, which are treated more favorably in the C corporation; and limitations on the number of stockholders. In addition, the tax benefits of the Sub S will change, for better or worse, with changes in corporate and individual tax rates. Several states do not recognize the S corporation for state tax purposes. All of these issues should be discussed with your lawyer and/or accountant.

To qualify as an S corporation, your business must meet these legal requirements:

- It must be an independently owned and managed domestic corporation
- It may have no more than 75 stockholders
- It must have only one class of stock
- It may have no stockholders who are nonresident aliens
- It cannot be a financial institution that takes deposits and makes loans
- It cannot be in the insurance business taxed under Sub-Chapter L of the IRS Code
- It cannot have received tax credits for doing business in the United States

Limited Liability Company

The limited liability company (LLC) is a state-chartered organization which may offer the best of both worlds, in terms of structure, for small businesses. An LLC allows for the reduced personal liability of a corporation, but with the tax advantages of a partnership, although not all LLCs qualify for partnership federal income tax treatment. Its partnership approach enables the company to act as a reporting agent and not as a taxable organization, therefore eliminating the "double taxation" of a C corporation (where corporate profits are taxed, and then taxed again as income to the owners/shareholders when the dividends are distributed). It also allows for an unlimited number of partners. There are no restrictions on member nationality (as there are with an S corporation).

Conversely, the corporate aspect of the LLC lies in its ability to eliminate personal liability for the firm's debts and enjoy perpetual life. As with most small businesses, however, no matter what form of organization you elect to use, bankers are typically not risk takers, and may still require the major partners of a new business to personally guarantee any loan made to their concern. Finally, unlike a Sub S, an LLC can issue several different types of stock (thus allowing for unequal shares of company assets). This gives the company greater access to capital.

First established in Wyoming in 1977, the LLC form of organization took the country by storm. By mid-1996, all states were expected to have their own version of Limited Liability Company laws. Currently, the American Bar Association is reviewing a "Uniform Limited Liability Company Act." However, legislation is still several years away. Since each state differs somewhat in the regulations used to govern an LLC, resolution of a taxation or liability claim could be difficult and costly if a dispute should arise between businesses in different states. Likewise, the tax and liability benefits associated with an LLC will vary from state to state. Again, it is imperative that you contact a qualified attorney if you are considering this form of organization.

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Comparing Organizational Structures

Attribute	LLC	S Corp	C Corp	Partnership	Proprietorship
Liability protection	Yes	Yes	No	No	Yes
Member restrictions	Yes	No	No	Yes	No
Double taxation	No	Yes	No	No	No
Transfer of shares	Yes	Yes	No	No	No
High cost of start-up	Yes	Yes	No	No	Yes/No*
Easy access to capital	Yes	Yes	Yes/No	No	Yes

*Can be high, particularly in states that have only recently adopted LLC regulations.

Source: Business Week, July 18, 1994, and Inc. *magazine*

PITFALLS

Lack of Adequate Analysis

The form of ownership you select is a critical decision. Take time to consider your alternatives carefully, to make sure that your decision will provide the best combination of flexibility, protection, and income at your business's current stage of development.

Lack of Professional Advice

The tax and liability consequences of your choice of ownership structure is potentially enormous. Many of the issues you have to evaluate to make your decision require the advice of both a lawyer and an accountant. Although there are costs associated with their services, in many cases they will provide these services on a fixed-fee basis. Good preparation prior to meeting with your advisers can reduce your costs significantly while saving time and money.

Failure to Review Legal Structure

As your business grows, you should evaluate your form of ownership on a periodic basis. You may find that the business you started five years ago as a partnership, which made sense at the time, would now be better off as a limited liability company.

Chapter Ten: MANAGEMENT AND PERSONNEL

The Management and Personnel section is vital to your business plan. It must make those evaluating your plan confident that you have the ability to hire and manage the team needed to make your business a success.

The section can be short and concise. The reader should already be well aware of what your business is trying to accomplish. The purpose here is to show how you expect to garner the human resources to do it. You must demonstrate that you will build a team, leverage all of the appropriate resources available to you, and that you have considered your staffing needs in detail. Additional information, such as complete résumés of your managers, should be presented in your appendices.

All lenders want to know how will you staff and manage your business. These are critical issues that require planning and creative thinking. Usually, in a start-up situation, you have limited resources available. Therefore, you have to be as creative as possible in order to attract the qualified personnel you need, at the salaries you can afford to pay.

From a management viewpoint, how you organize your business will also be important to your business success and employee job satisfaction. Carefully consider what your own contribution to the business will be in both the short term and long term, as well as the role that you may want external consultants and others to play.

Since the recycling business is very labor-intensive, your commitments concerning labor will profoundly affect your financial statement. Your labor estimates need to match your production schedules and cost analysis exactly.

THE BASICS

Although initially you may be relying on some people for *pro bono* assistance or on others for "sweat equity," you should fully evaluate the staffing needs of your business, as well as the management configuration you will use. The following areas relating to management and personnel should be covered in your plan:

Management

Short, one-paragraph profiles ("bios") should be included for yourself, partners, and any others who will have management responsibility. The profiles should highlight experiences that are directly related to the work at hand. For example, if you are starting a plastics processing facility, you would certainly focus on your work experience as a foreman or supervisor of a similar facility, and on your educational background in chemical engineering. If none of your full-time management team has direct experience, be sure that other individuals closely associated with the business, such as consultants or advisers, do. Include a full résumé for each individual in the appendices.

Key Personnel

A short bio should also be included for any key members of your staff who are not in management positions. For example, you may be leasing or buying an entire production line from an independent company, or you may be planning to redesign and rebuild your fleet of trucks in specific ways. Include profiles of these key company components in this section of your plan.

Professional Advisers

Your business should have established relationships with an attorney, an accountant, and an insurance adviser while developing your plan. These individuals are key members of your team. Their bios should also be included in this section.

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Staff
Although you may have some ideas about particular individuals whom you'd like to hire, this section should include descriptions of the jobs that need to be performed, salary and benefit levels, and any special requirements or qualifications. The descriptions in this section should resemble well-written classified ads, and there should be descriptions for each position.

Consultants
If you plan to use consultants, include their bios. Consultants bring expertise to the business that your management team (in many cases, a team of one) may not possess. Consultants' experience and credentials can make a difference to a potential banker or investor. For example, if you are starting a recycled products gift shop, you might find a retired accountant with a great deal of experience who would be willing to advise you on the tax and/or operational aspects of your business. Any counselors, such as those associated with Small Business Development Centers, should also be mentioned in your plan.

Boards of Directors/Advisers
No matter how small your business, consider establishing a board of directors or advisers. It should include bankers, attorneys, accountants and other professionals. This board can be instrumental in offering advice as you develop and grow your business. Except in the case of a corporation where the bylaws will govern, the structure of your board can be informal and flexible. The board is a low- or no-cost resource that can add significantly to your overall management capabilities, assuming you have selected individuals with substantial backgrounds and experience.

Organizational Chart
If your business employs several people, or has a variety of product or service offerings, include an organizational chart. The chart should show how you plan to organize your human resources to reach your goals. It should indicate the responsibilities of individuals within the organization and who reports to whom. For example, in a curbside collection business, the chart would indicate who is responsible for equipment maintenance, how many work crews there are, whom they report to and who is responsible for new business development.

Staffing Plan
Briefly describe your future professional and staffing personnel needs, making sure that the description reflects the business growth projections that appear in other sections of your plan.

Salary and Benefits
Explain your philosophy regarding the work environment and company culture you intend to create, and how you plan to compensate and reward employees. Your long-term goal may be to provide a wide-range of fringe benefits, including health insurance, retirement benefits, and incentive saving plans. In the short term, however, you may be able to offer only a life insurance plan or paid vacation time. The success of your business will determine future benefits..

PITFALLS

Estimate of Personnel Needs
Overestimating your personnel needs will dramatically affect the bottom line — you'll have higher working-capital requirements. On the other hand, underestimating personnel needs will inhibit your ability to provide your products or services efficiently. Map out your staffing requirements as carefully as possible, and consult your advisers to test your assumptions.

Compensation Package
Your compensation package must be adequate to attract and retain employees. Your employees' satisfaction should come second only to that of your customers. In the long run, your ability to offer a comprehensive and competitive benefit plan will help attract high-quality workers and reduce turnover.

Chain of Command

Employees, particularly in closely held or family-run businesses, need a clear understanding of whom they report to and what they are responsible for. Often employees find themselves answering to more than one boss, which can be very frustrating and lead to confusion and inefficiency. An Organization Chart will be of major help at this point.

Management

You want an adequate degree of supervision in your business, but not too much. Your employees should have a clear sense of their superior's duties and responsibilities. They should not feel that too many people are watching the work and not enough doing it.

SOME EXPERT ADVICE:

"The real key to running a successful business is to hire good people. You cannot make business decisions about competing in today's world without considering the people who have to 'buy' the concept and deliver the results."

—Steve Burkhart, Chairman of the Board, Advanced Micro-Electronics, Vincennes, Ind.

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Management: A Real-World Example (a processing facility)

Management Team

The management team consists of the following individuals; Bob Jones, Judy Jones, Carol Hoffman, Dave Kings and Brian Cole. Each having various skills in marketing, operations and finance.

Bob Jones, C.E.O. & President, has fifteen years marketing experience in the specialty chemical industry, five years marketing experience in the wastewater treatment industry and thirteen years research and development of bacterial cultures.

Judy Jones, Vice President, has ten years experience in operational management from previous self-employment and three years marketing experience in the specialty chemical industry.

Carol Hoffman, Office Manager, has five years retail sales and management experience and five years administrative and management experience.

Dave Kings, Sales Manager, has five years sales experience in the wastewater treatment industry, seven years sales and management experience in the insurance industry and two years sales management experience in the wastewater treatment industry.

Brian Cole, Sales Training Consultant, has one year sales experience in the communications industry, five years sales experience in the wastewater treatment industry and four years training experience in the wastewater treatment industry.

FUNCTIONS OF KEY PERSONNEL

	Bob Jones	Judy Jones	Carol Hoffman	Dave Kings	Brian Cole	Outside Agents
Sales	X			X	X	
Public Relations		X	X	X		
Advertising		X	X			
Risk vs. Benefits	X	X				X
Office		X	X			
Management						X
Legal						X
Tax						X
Technology	X					

Source: New York State Small Business Development Center

Chapter Eleven: COSTS AND PRICES

In terms of writing your business plan, you are about to create the draft budget and provide the financial information that any lender or investor will examine early and closely.

Costs and Prices

Your first task in tackling the financial pages is to determine the cost of and price for your product. In the simplest terms, the price you can charge for your product or service is the value the market places on it. You calculate the costs of producing the product or service and add profit margin to create the price. The product and service is then sold to customers willing to pay that price.

As with all commodities, there are fluctuations in market prices. Collectors, handlers, processors, and non-retail end-users have to respond to these fluctuations, as does any industry dealing with a commodity. Individual deals also differ from market prices. If your product differs significantly from that of other manufacturers (i.e. quality, delivery schedule, special specifications), then you can still get a better price for it (**Recycler's World** maintains current information on commodity prices and material exchanges, including grades and specifications. See especially their Website at www.recycle.net).

Feedstock costs set by the market are *not* the sole factor determining the cost of your product. All the components of the recycling industry will find themselves negotiating over the cost of their feedstock and having to negotiate over the price of their product. Each component will have different ways of decreasing costs and to keep prices competitive.

In the recycling industry, the areas which create some latitude in price are:

- the quality of the feedstock material;
- the shipping costs of the supplier;
- the available monthly supply;
- the mix of raw material;
- production costs; and
- sales price of finished goods.

Collectors, handlers, processors and end-users will all find themselves seeking price advantages in these areas by negotiation, efficiencies, market-knowledge or a combination of the three.

Further, prices vary regionally. As one example, taken from the NSWMA, top prices for a ton of PET from processors varied (in 1992) from $100 in the South to $140 in the Northeast to $160 in the West and to $200 in the East Central area (Commodity prices like this appear regularly in the Recycling Times, published by the National Solid Wastes Management Association). Other major factors that influence your profitability include:

- tipping fees;
- regulatory requirements;
- economic incentives;
- recycling zones; and
- legislation.

In other words, while the basic prices are determined by supply and demand, they can vary from time to time and region to region according to other factors.

It is therefore most important in writing your business plan to provide financial information that deals with the region or local area in which you intend to operate, not merely with national averages.

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Profit Margin

Calculating your costs is the first step in calculating your price. Next, you establish the return you want in quantitative terms. For start-ups, the return is most often expressed as the amount of salary you will require for yourself over the short term. As your business grows, you can expect earnings to increase as well, but in the formative years, when you are establishing yourself, plan to take a modest amount from the business. If you are more successful than you planned, all the better. This approach will help ensure a viable business and, potentially, more funds for advertising and promotion. As your business grows, you may expand your pricing objectives to include maintaining or improving market share, price stability, or preventing competition.

In any business, it is the profit margin that gets squeezed between costs and prices and causes the business to eventually lose financial viability.

THE BASICS

How Low Can You Go?

The first step is to determine your break-even point (BEP). The BEP is the point at which your total costs are equal to your total revenue. At sales levels below the BEP, you will have a loss. At sale levels above BEP, a profit. You can calculate the BEP as follows:

This formula will enable you to determine the number of transactions you will need to achieve break-even. Transactions can consist of hours worked, jobs completed, services provided, or any other single unit of measurement. Then you can estimate the number of customers you need, and compare that number to your estimated market-share information. These calculations should indicate how likely you are to achieve the minimum level of sales required in your first year.

BREAK-EVEN QUANTITY

$$BEQ = \frac{FC}{P\text{-}VC}$$

BEQ = number of transactions necessary to break even (i.e., pounds sold, units processed, hours billed)
FC = fixed costs for one year
P = price that you will charge for a single service or transaction
VC = direct or variable costs related to each transaction

To complete your break-even analysis, you will have to make many assumptions, any one of which could have a substantial effect on its outcome. That, however, is the nature of this type of analysis. It is advisable to calculate your BEP according to the method you find most often used.

Pricing strategies that vary from this break-even approach are difficult in the recycling business. Prices are constrained so strongly by the commodities market that production costs become very important, making it difficult to adjust prices.

Penetration Pricing

This strategy involves either paying your suppliers at above market-prices or pricing your product or service at a level below that of your competition. Your goal is twofold: 1) to get customers to switch from your competitors because they perceive that you can give them better value and 2) to attract customers who previously have never used such products or services (or have used them infrequently due to price barriers). This strategy works most effectively for businesses that can achieve economies with increases in volume. On the downside, you must be very careful when implementing this type of pricing structure. Here are two reasons why:

First, you must be confident that you can achieve your financial goals at these lower price levels. If your projected sales levels don't come to fruition, you cannot always solve the problem by simply increasing the price. At that point, faced with higher prices, your customers may revert back to

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their former service providers. You may also lose customers who are new to the market when they realize they cannot afford to continue buying your products or services.

Second, your competitors have the ability to interfere with your plans in the short run, assuming they don't want to decrease their own prices over the long term. For example, they can temporarily discount their prices to match yours, thus taking away your advantage and keeping their existing customers, forcing you to either go out of business or to raise your prices to match theirs.

New businesses should approach penetration pricing with caution. It is dangerous to compete on price when you are up against more established competitors.

Premium Pricing

Premium pricing, as the name suggests, is a strategy whereby you price your product or service at the high-end of the market. You are trying to attract customers who are willing to pay more for what they consider to be superior service. They assume that the higher price, by definition, means higher quality. They may also find some ego gratification from selecting your "green" product or service.

The upside of this strategy is more profitable sales. The downside is a mirror image of the penetration strategy. That is, if you are forced to lower prices because you misread consumer demand or increased competition continues to enter the market, you may find that a number of your customers switch back to their former service providers. In addition, at lower pricing levels, it may be impossible for you to maintain your former level of service due to the high costs associated with delivering it.

PITFALLS

A number of factors can have negative impacts on your overall pricing strategy. Any lender will scrutinize your business plan very carefully if it involves departure from normal pricing strategy.

Underestimating Costs

The failure to identify and estimate costs accurately can have a devastating effect on your business. If the reader of your business plan notes that you have underestimated or even omitted costs, your application for a loan could be rejected.

Competition

You need to identify all relevant competitors and their pricing policies. Failure to do so may result in both overestimating market share and/or pricing errors. Either way, it could prove fatal to your business.

Discounts and Allowances

If you intend to offer discounts, such as 15% off to preferred customers, be sure to include them in your pricing analysis. A 15% discount to the top 10% of your customers would have a significant effect on your bottom line.

SOME EXPERT ADVICE:

"When I started out, I didn't realize how tight my margins would be. Although I used industry standards as pricing guidelines, there were many costs – particularly for packaging and shipping – that turned out to be higher than I originally estimated. Also, my labor expenses have continued to rise. Now that I have a better feel for the costs, I've been able to build them into my new pricing structure."

—Eileen Sutherland, Owner, Shake, Rattle, & Wrap, New Castle, N.H.

Pricing: SPECIFICS FOR PLASTICS RECYCLERS

The following table shows the major cost categories you need to consider when developing a recycling facility. Some do not apply equally to all components of the industry, but at least in terms of calculating your costs and prices, all should be addressed in your business plan.[7]

Capital Costs	*Operating Costs*
Site acquisition	Feedstock procurement
-Site selection process	
-Purchase price	Labor
Permitting	Utilities
-Consulting fees	
-Permitting fees	Maintenance and Repair
-Taxes and other incentives	
	Financing (interest)
Building	
-Site work	Transportation
-Engineering	
-Construction	Process residue and reject disposal
-Utilities connections	
-Paving	Materials marketing
-Landscaping	
-Construction management	Insurance (property, liability)
Equipment	Workers' compensation insurance
-Expected useful life	
-Salvage value	Administrative (accounting, payroll, etc.)
Vehicles	Federal, state and local taxes
-Expected useful life	
-Salvage value	

All these costs apply to all recycled materials (This is a major reason why a Materials Recovery Facility which starts with, say, paper, will expand to processing glass, aluminum and plastics). However, the cost per ton of recovering and processing different types of feedstock varies widely. The highest cost in all recycling is the cost of labor, yet automation is not always the solution. As the NSWMA comments, "Automated sorting of plastic leads to increased efficiency, but changing materials specifications and technologies could jeopardize the efficiency and investment in such equipment." For example, in 1992, the cost of newspaper averaged $33.59 per ton, while the cost of plastics was $183.84 per ton for PET and $187.95 per ton for HDPE. Costs have since changed considerably, often due to the development of new technology.

The NSWMA has created the following table concerning the cost components of a MRF. It presents both a range and an average of costs — from a 1992 survey:[8]

Component	*Range*	*Average*
Labor	27.3—43.3	33.4
Building rent/amortization	7.5—34.4	16.7
Equipment Amortization	6.0—25.2	13.5
General Administration	2.1—28.2	13.0
Residue Hauling/Disposal	1.5—16.6	7.7
Maintenance/Repairs	2.0—14.8	6.1
Insurance, Taxes, Miscellaneous	5.2—12.4	9.7

[7] This table comes from the American Plastics Council, *How to Develop a Viable Post-Consumer Plastics Handling Business*, p. 72.
[8] The following information comes from *The Cost to Recycle at a Materials Recovery Facility*, NSWMA, 1992.

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These figures contain so much variation that they may not help you in making your decisions on costs and prices, but they do suggest opportunity for skillful business planning. As the NSWMA comments, there was an extraordinarily large variation between different facilities in some of the recycling components. By heading toward the lower-end of the scale in selected items, you are more likely to be successful in lowering both costs and prices (i.e. by locating your business on land used for other solid waste management activities).

Plastics Collectors

The best source for calculating and understanding the costs of the collection process is *How to Collect Plastics for Recycling: Lessons from the Model Cities Demonstration Program*, published by the American Plastics Council. It dedicates a full chapter to the subject and, most importantly, it gives alternative costs for different procedures—such as incremental costs based on adding plastics collection to an existing collection business versus starting a new business. We mention only a few salient points (More recent sources can be found at your trade association or the National Recycling Coalition).

The price of your collection service will depend on the costs of your collection. The following is an estimate of the sources of your principal collection costs:

Capital costs

- Amortized collection vehicle;
- Amortized special equipment (e.g. plastic compactor); and
- Amortized set-out containers.

Operating Costs

- Labor;
- Supplies;
- Administrative and Overhead;
- Truck Maintenance;
- Fuel, Lubrication and Maintenance;
- Truck Taxes, licenses, insurance, registration fees;
- Replacement of set-out containers; and
- Training/education/promotion costs.

Your projections of revenue will also depend on:

- the generation rates for scrap materials in the area;
- collection fees (if any); and
- tax incentives.

Your capital costs and your operational costs will both depend on the quantity of material to be collected and the way in which it is collected. Your operational costs will be most heavily influenced by:

- the source of your material;
- the costs of transportation (hauling); and
- off-route time of your vehicles.

The cost/availability of materials may depend on the local or state landfill situation, especially in terms of its effect on tipping fees. Municipalities and large corporations may be motivated by the desire to reduce their waste streams and landfill costs. If so, a municipal and an industrial-source collection-service may well become the more economical option.

The price of the scrap material you supply to handlers will fluctuate based on commodities market conditions, and also with competition from other sources of scrap plastic. You may choose to supply one or more handlers in your chosen collection region, or you may ship to regional or even national handlers, Especially if you are collecting a type of plastic that is in short supply.

The (lower) the prices you can offer so as to compete, will largely depend upon the costs of your

operations compared to those of other collectors. You can lower costs and prices by greater efficiencies in collecting and in cooperating with handlers to redesign your facilities and schedules.

Plastics Handlers

The best source of information concerning handling costs is *How to Develop a Viable Post-Consumer Plastics Handling Business,* published by the American Plastics Council. It provides a chapter and worksheets for estimating processing and operating costs (You won't find the details included in this guide. However, the following chapter of this guide provides samples of how to present this information and the worksheets to help you do so).

Your goal is to add value to the collected plastic by sorting, baling and perhaps pelletizing it. You must first be able to obtain a sufficient supply of materials at an appropriate cost. You must then be able to handle them in a manner which enables you to sell them to a processor at a price which ensures a profit.

A handler's costs for design of a facility, equipment, and operational costs depend primarily on the amount, quality and type of material to be handled. The prices of baled or sorted scrap plastic vary with the quality of the material. Therefore, handlers need the most accurate possible estimates of the amount and type of material available from collectors.

Labor is the highest cost component in a handling operation. Automatic handling equipment is expensive, and most handlers are labor-intensive, with the associated problems of training, retaining and replacing skilled workers. On the other hand, handlers can quickly reach a threshold below which it is not economical to operate certain kinds of automatic or semi-automatic equipment. The use of equipment versus labor is a matter that handlers should measure carefully when calculating costs.

The following table gives you an idea of the comparative costs of the stages of the handling process in terms of cents per pound:[9]

Procurement	0-4 cents per pound
Sorting	4-10
Baling	2-3
Grinding	1-2
Cleaning, Drying, Separating	8-10
Extruding and Pelletizing	6-7
Transporting	1-2

These costs do not include the cost of equipment or the management of the business.

The major solution to cost problems lies in negotiating contracts with the collector and the processor which specify the amount, type and quality of material to be delivered.

To overcome the fluctuating prices which you may experience due to general market conditions, your main goal may be to provide a specific quality of recycled plastic to the processors in a steady or predictable quantity. This is because the price of a bale of sorted plastics is heavily influenced by its degree of contamination. Scrap plastics with little or no contamination will receive a premium price. Negotiations to meet the type and quality specifications of the processors should be addressed frequently.

Plastics Processors

[9] From *How to Develop a Viable Post-Consumer Plastics Handling Business,* p. 70.

The principal source of information for processors is *The Cost to Recycle at a Materials Recovery Facility*, published by the National Solid Wastes Management Association. It contains details on both costs and prices nationwide. Also very useful — though specific to Minnesota — is *A Business Guide to Recycling Market Development*, produced by the Minnesota Office of Environmental Assistance.

The first need of processors is to identify the price, quality, type, and quantity of plastic required by various end-users. In other words, you need to project sales or demand. In the opposite direction, you need to identify the costs and availability of raw materials. Between these two figures lie your operations.

Published sources provide current prices for recycled feedstocks (see Resource Directory). The price of recycled feedstock will respond to the prices of virgin resins and of other alternative feedstocks (i.e. lumber). In some cases, however, the cost of resins may matter less than the demand for plastics made from recycled products. For certain types of resins, an end-user can realize significant cost-savings by using recycled materials.

In terms of operations, the efficiency and capacity of the design of your facilities will affect your costs. Labor and equipment are the two highest cost components of a processing operation, and you will have a difficult time comparing the cost of an automated plant versus the cost of a semi-automated plant.

Low-interest loans and tax and development incentives are available to processors who meet certain requirements (for information, see the Minnesota manual). Changes in regulations at the national, state and local levels can affect the price and the demand for recycled post-consumer plastics. It is crucial that you are aware of these changes in order to provide competitive advantages as a processor.

Plastics End-Users

End-users must carefully consider the cost of recycled feedstock versus virgin resin and, with the demand for recycled content steadily growing, consider the advantages in the market of a product with recycled content. However, research has determined that cost and quality are more important to most consumers than are recycled content. Therefore, you must compete in price and quality rather than relying on the "green" nature of your product.

The prices of all raw materials fluctuate. In the area of recycled plastics, a long-term contract will secure a fixed-price and known quantity of materials, reducing potential risks from fluctuations.

Your company image has a significant effect on the prices that you will be able to charge. Relying on company image, many corporations can conceivably charge more for their products than "Unknown Company, Inc.", by attracting a large number of customers who are willing to pay a premium for something they believe to be of superior value.

Intangibles often create the biggest effect on your customers' perception of value and on their purchasing decisions. The quality of your warranty, friendly service, and follow-up add value to your offering, and many people may be willing to pay extra for these services. The importance of these factors and their relationship to price cannot be overstated.

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SPECIFICS FOR GLASS RECYCLERS

Prices for cullet have varied greatly over the last decade or so, though the glass manufacturing industry is developing strategies to overcome the worst of the fluctuations. In addition, the prices for the various kinds of cullet always differ, and the more high-quality cullet you can produce, the more profitable your operations become.

The effect of price variations has been to force the glass recycling industry to pay very close attention to costs.

Your best current source of information for the varied pricing practices in the cullet market is by contacting one of the regional offices of the Glass Packaging Institute.

Pricing: SPECIFICS FOR RUBBER RECYCLERS

Pricing of various kinds of rubber and of scrap tires varies considerably according to their intended use and your location. The best sources of information are the International Tire and Rubber Association, Inc., the North American Recycled Rubber Association and the Tire and Rubber Recycling Advisory Council. In periodicals, you can consult Recycling Today, Scrap Tire News, Tire Business and Waste News. On the Web, **Recycler's World** and **ISRI** can provide very recent information.

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PRICING: A Real-World Example (a plastics processing company)

Feedstock Pricing

Our ability to obtain raw material at a very advantageous price is due to several factors, including:

- Most of the suppliers create the bulk of their revenues from charging a tipping fee to cover their production costs. As such, these companies are usually willing to accept a price on materials to just cover their cost of shipping the material to market.
- A minimal number of outlets for commingled post-consumer plastics exist.

We will engage the following criteria to establish a price for material acquired from that supplier:

- material quality; estimated shipping cost of supplier; consistent availability of supply; and material mix.

Our financial projections allow for the acquisition costs of $.018 per pound or less for feedstock acquired in year one. This allowance increases to $.02 per pound in year two.

Finished Goods Pricing

Quality and quantity of our products will allow our finished goods pricing to be significantly higher than market average. Per pound market prices for year one are estimated to be:

Material	Baled Price	Ground Price
PET-Clear	$.12	$.16
PET-Green	$.12	$.14
HDPE-N	$.08	$.13
HDPE-MC	$.06	$.08
PVC	$.14	$.16

Source: Nevada Small Business Development Center

Chapter Twelve: FINANCIAL INFORMATION

The Financial Information section could be the most important section of your business plan.

This section demonstrates how you expect your business to perform in quantitative terms based on the market assessments included in your plan. The information takes the form of financial statements, which are simply standard formats used to present financial information. Most of your statements will be developed on a pro forma basis, which means that you are projecting data, such as future revenues and expenses, using assumptions you have made and can support.

> Many different ways for preparing financial statements exist, and eventually your accountant will have a preference. For your own planning, we strongly recommend you use the financial planning sheets provided by *Inc.* magazine in Warren Purdy's, *The Service Business Planning Guide*. They will lead you through the stages described in this chapter, which is mostly summarized from that book. *Five of those pages appear later in this chapter.*

Complete, accurate, and well-documented financial information is crucial for a number of reasons. For example, if you are using the plan to apply for commercial financing, loan officers usually focus their attention on the numbers. That is, after reading the Executive Summary and the Market overview, they proceed directly to your financial information.

This is understandable because loan officers are experts at — and most comfortable with — financial information as opposed to marketing data or promotional strategy. Once they have a basic understanding of the type of business you plan to enter, they review your financial information and develop a preliminary assessment as to whether they would be willing to finance your business. If the answer is "yes", they go back and read through your entire business plan in detail.

For this reason alone, you should err on the side of conservatism.

Accurate financial information is also very important because it establishes the basic framework you will use to monitor and control your business and to report information to the government (i.e. tax purposes), bankers, investors, and other stakeholders.

Although it is wise not to become too dependent on electronic spreadsheets, they can make your job much easier. As you begin to gather and record information for your financial statements, you will want to be able to update them and/or change your assumptions. Spreadsheet software enables you to do this with little effort and the highest degree of mathematical accuracy. In addition, a manual "one-write" -type checking system, an electronic checkbook program, and a computerized accounting package are inexpensive and efficient ways to organize your records. They also allow you to generate financial statements for tax purposes.

Finally, be sure to document all the assumptions you use as a basis for your projections in this section of your plan. Don't simply present statements without explanation. There should be a bright line that links the data presented in the Market, Market Share, and Competitive Analysis sections of your plan to the projections you make in the Financial Information section.

When in doubt as to whether you have made it clear enough, restate your assumptions as notes to your cash flow or income statements and/or refer the reader to the appropriate section(s) of your plan for more detail.

> *Of all possible flaws in the presentation of a business plan, lack of clear connection between assumptions and financial projections ranks among the most serious, yet it's one that can be easily fixed. We suggest you ask an accountant or a Small Business Development Center consultant to focus critically on your preparation of projections.*

THE BASICS

Financial Overview

To benefit from the reader's habit of turning from the Executive Summary to the Marketing Plan to the Financial Statements, you should begin this section with a Financial Overview immediately prior to financial projections. The section should emphasize the following:

1. *Distinction between Start-Up and Operations Expenses*
   Lenders and investors want to look at these two categories separately since most start-up expenses are incurred prior to the time operations commence. Operations support the returns on investment or repayment of debt utilized after the majority of the loan or investment has been applied.
2. *Detail on "the Deal"*
   Expanding on the Executive Summary, you now provide more detail on the loan structure and the estimated returns or repayment ability. You now give a much more detailed breakout of project expenses and an explanation of the capitalization of the company including existing ownership, equity, shares issued, etc.
3. *Schedule*
   You should now prepare the schedule covering the time from when you receive financing, to initiating the project, and commencing operations. In almost all cases, the financial information makes more sense if Month One is the commencement of operations.

The financial and other related statements described in this chapter should be included in your business plan. We give examples for Well Seated, Inc., an imaginary lawn furniture manufacturer that uses 100% recycled plastic lumber. Located in Spokane, Washington, the business employs two full-time workers, including the owner who spent 30 years working for a local lumber yard and who built wood furniture in his spare time. The company offers a small line of furniture products including chairs, chaise lounges, and both six-foot and eight-foot picnic tables, each available in a variety of colors and finishes.

From market research, Well Seated anticipates an average sales volume of $15,000 per week during the peak season from April 1 to August 31. In the off-season (September 1 through March 31), sales are expected to slow to roughly $5,000 per week with most purchases being made via mail order from the southern United States. In order to have enough inventory for opening day, the company expects to begin operations on January 1, 1997.

Well Seated, Inc. is a start-up business, so all its statements will be developed on a pro-forma basis. If you are already in business, you will be generating the same types of statements, but most of the information/data will come from your actual business records. Even if you are working with a consultant while developing your business plan, it is very important for you to understand how your own projections are made and to agree with them. They will form the basis of your financing needs and your salary level, which may be with you long after your friendly adviser leaves.

Capital Equipment List

This list should include a description and cost for each item of machinery and equipment you must purchase to start your business. The list should be detailed; however, you can combine similar articles of low unit-value, such as drill and router bits, nails, and screws. High-ticket items such as computers or vehicles, should be footnoted to provide a quote from your supplier. The capital equipment list will be used to help determine the amount of fixed-asset financing you will require.

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Here is our "imagined" capital equipment list for Well Seated, Inc:

WELL SEATED, INC.
Capital Equipment List
January 1997

ITEM	DESCRIPTION	QTY.	UNIT COST	COST
Equipment				
	Telephone system	2	150.00	300.00
	Delta ¾" Drill Press (floor standing)	2	400.00	800.00
	Delta 10" Compound Miter/Chop Saw	1	230.00	230.00
	Miscellaneous hand tools	1	500.00	500.00
	Delta Table Saw 10"	1	300.00	300.00
	Ryobi 6 1/8" Jointer/Planer	1	300.00	300.00
	Reliant 6" Belt 9" Disc Sander	1	190.00	190.00
	Porter Cable Power Drill	2	90.00	180.00
	Porter Cable 3X21 Belt Sander	2	170.00	340.00
	Porter Cable 6" Skill Saw	2	115.00	230.00
	Miscellaneous hand tools (hammers, screw drivers, wrenches, etc.)	1	500.00	500.00
Computer[1]				
	486DX66 w/CD ROM/fax modem	1	1500.00	1,500.00
	Color monitor	1	350.00	350.00
	Color ink-jet printer	1	400.00	400.00
Software				
	Windows 95	1	95.00	95.00
	Microsoft Office	1	189.00	189.00
	AutoCAD	1	871.00	871.00
Furniture				
	Office desk	1	350.00	350.00
	Chair	1	175.00	175.00
	File cabinet	1	200.00	200.00
Vehicles[2]				
	2-ton Pick-up (used)	1	7,250.00	7,250.00
	18' Delivery Truck (used)	1	13,000.00	13,000.00
TOTAL				28,250.00
	Cost Estimates From:			
	1. CompuWorld, 133 Edison Drive, Spokane, WA			
	2. Reynolds Truck Center, 1933 Peters Road, Kennewick, WA			

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Start-up Costs

This statement estimates the amount of money you will need to launch and maintain your business until sales receipts can cover operating expenses and debt service. You need to project all monthly expenses such as utilities and salaries; prepaid expenses such as insurance; and one-time expenses such as a Grand Opening event. Once these have been calculated, you should add a contingency amount to provide for some margin of error if sales do not materialize as quickly as you expect. Often, this margin will be an amount equal to two or three times your monthly operating expenses, employees' salaries, and your salary (draw). This statement will also be used to estimate working-capital needs.

WELL SEATED, INC.
Start-Up Cost Estimate
December 1996

PRE-START-UP

ITEM	Estimate
Capital Equipment	28,250.00
Deposits with Public Utilities	200.00
Legal & Other Professional Services	150.00
Licenses & Permits	75.00
Advertising and Promotion	500.00
Prepaid Insurance	200.00
Other Expenses	100.00
SUBTOTAL	29,475.00

OTHER START-UP COSTS

ITEM	Est. cost per month	# Months coverage	Total estimated cost
Salary of Owner	1500.00	2.00	3,000.00
Other salaries/wages	3000.00	2.00	6,000.00
Rent	N/A	N/A	N/A
Advertising	300.00	2.00	600.00
Delivery Expense	200.00	2.00	400.00
Supplies	150.00	3.00	450.00
Telephone	50.00	3.00	150.00
Other Utilities	200.00	3.00	300.00
Insurance	800.00	3.00	2,400.00
Taxes, Social Security	0.00	0.00	0.00
Interest	200.00	3.00	600.00
Maintenance	50.00	2.00	100.00
Legal and other professional assistance	175.00	2.00	350.00
Misc.	75.00	2.00	150.00
TOTAL FROM OTHER START-UP			14,500.00
TOTAL FROM PRE-START-UP			29,475.00
TOTAL ESTIMATED START-UP CAPITAL			43,975.00

Sources and Uses of Cash Statement

This statement indicates how you plan to secure funds to start your business and how you intend to spend them. Both your sources and uses should be categorized. For example, if you plan to borrow money to purchase a building, a truck or equipment, these loans should be listed as separate items because the interest rates and repayment terms will be different for each. For the purposes of this analysis, 25% owner equity/investment is assumed. Your sources of cash must always equal your uses. If they don't, you probably haven't calculated your equity properly.

WELL SEATED, INC.
Sources & Uses of Cash
January 1997

SOURCES	
Owner's Investment	10,995
Working capital loan	11,795
Capital equipment loan	3,445
Computer equipment loan	2,550
Vehicle loan	15,190
Total Sources:	**43,975**
USES	
Working capital	15,725
Purchase capital equipment	4,595
Purchase computer equipment	3,405
Purchase vehicles	20,250
Total Uses:	**43,975**
*Note: The bank will probably combine the equipment loans and the vehicle loans.	

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Balance Sheet

The balance sheet answers the question, "What is the financial condition of your company on a particular date?" It lists what your company owns (its assets) and what your business owes (its debts). The balance sheet also reflects net worth or owner's total equity, which is the amount left over after total debts are subtracted from total assets.

The formula for the balance sheet is: **Assets = Liabilities + Equity**

Assets are what your business owns (cash, supplies, accounts receivable, equipment, land, buildings). These are the investments your business has made to earn a profit. Liabilities are debts your business owes (accounts payable, loans, mortgages, installment debt, and so on). Owner's equity represents the claims against business assets by the owners of that business. This amount includes the owners' investments plus any profits that have been retained by the business (in the case of a corporation these are called "retained earnings"). If your business is incorporated, the owner's equity is referred to as "stockholders' equity." If you are in a start-up phase, your balance sheet will be constructed on a pro forma basis, meaning that you have to project what your assets and liabilities will look like on the day you open for business. These figures can be derived from your Sources and Uses of Cash statement. For example, if you are transferring ownership of a car to the business, it should be listed as an asset on your company's balance sheet. If your business is already in operation, gather the actual amounts for each category as of the day you plan to generate the statement.

WELL SEATED, INC.
Balance Sheet
January 1, 1997

ASSETS		LIABILITIES	
CURRENT ASSETS		CURRENT LIABILITIES	
Cash	14,825.00	Notes Payable	11,795.00
Accounts Receivable	0.00	Accounts Payable	0.00
Supplies	500.00	Accrued Expenses	0.00
Prepaid Expenses	400.00		
Other Current Assets	0.00		
		TOTAL CURRENT	
TOTAL CURRENT ASSETS	15,725.00	LIABILITIES	11,795.00
PROPERTY & EQUIPMENT		LONG TERM LIABILITIES	
Land	0.00	Installment Debt Payable	21,185.00
Buildings	0.00		
Equipment	8000.00	TOTAL LONG TERM	
Vehicles	20250.00	LIABILITIES	21,185.00
TOTAL NET FIXED ASSETS	28,250.00	TOTAL LIABILITIES	32,980.00
		OWNER'S EQUITY	
		Paid In Capital	10,995.00
		TOTAL OWNER'S EQUITY	10,995.00
		TOTAL LIABILITIES	
TOTAL ASSETS	43,975.000	& OWNERS EQUITY	43,975.00

Income Statement

The income statement, also known as the profit and loss statement or simply the P&L, is the record of your business's financial activities over a period of time. The income statement, prepared monthly, documents your revenue and expenses and establishes whether a gain or loss has occurred during that period.

As with the balance sheet, a start-up business must project or estimate the numbers to be used on the pro forma income statement. All these figures, with the exception of depreciation, can be obtained from your cash flow projections, which will be covered in the next section of this chapter.

The amount of depreciation (i.e. the part of an asset's dollar-value written off as an expense over its useful life) to include on the income statement will be determined by the number of depreciable assets your business owns and the method you use to depreciate them. The IRS has a depreciation schedule for all property purchased for business use. Most businesses use straight line depreciation, which is simply the total cost of the item divided by the number of years in its useful life. For example, an automobile with a five-year life span and a $10,000 initial price tag will be depreciated by 20% (or $2,000) each year, starting in Year 1, until its value equals zero in Year 5. It is important to remember that depreciation is calculated for tax purposes, and while a vehicle may last more than five years, it is depreciated according to an average life-span for all vehicles.

Property is generally depreciated over a three-year, five-year, or seven-year period (with greater periods applying to longer-term assets such as real estate). Typically, computer equipment falls in the three-year category, vehicles the five-year category, and office furniture the seven-year category. Real estate is generally depreciated over 27.5 to 31.5 years. For specific depreciation guidelines, refer to "How to Depreciate Property" (IRS Publication #946).

In addition, most small businesses are allowed under IRS regulations to expense (write off) $17,500 worth of depreciable assets (not including real estate) purchased in the current tax year. For more information on depreciation, consult IRS publication #946 or ask your accountant.

The formula used for Income is: **Revenues - Operating Expenses = Income**

Revenues are the total sales revenue less any sales returns, discounts, or allowances. Operating expenses include items such as rent, advertising, salaries, insurance, and other day-to-day operating costs. In the case of a C corporation, income taxes are an additional cost which are listed separately in the Income Statement.

Basic Structure of the Income Statement

It may be helpful to think of the Income Statement as a series of simple calculations:

Revenues–Operating expenses=Earnings before interest and taxes

Earnings before interest and taxes–Interest=Income Before Taxes

WELL SEATED, INC.
Income Statement
for 1997

NET SALES		$154,625
OPERATING EXPENSES		
Salaries (owner)	$18,000	
Wages (employees)	36,000	
Telephone & Utilities	750	
Insurance	9,600	
Advertising	3,000	
Professional Fees	900	
Office Administration	435	
Depreciation	17,500	
Travel & Entertainment	225	
Miscellaneous	465	
Non-Income Taxes	895	
TOTAL OPERATING EXPENSES		$87,770
OTHER REVENUE (EXPENSES)		
Interest Expense		-$2,457
INCOME BEFORE TAXES		$64,398

Cash Flow Statement

The cash flow statement is the most important financial management tool you have. It documents all cash transactions (income and expenses) that occur from month to month. It is like your personal checkbook where you post your deposits and draw checks against them. As with your checkbook, if you spend more than you take in, your check bounces. The reason this statement is so useful is that it forces you not only to analyze your sources of income and expenses but to do it on a cash basis. That is, you may sell a service such as environmental consulting but because your customer wants to be billed, you may not receive the payment (cash) for 30 to 45 days, or maybe longer. During this same period, you will probably have to pay your subcontractors on a weekly basis. Where does the money come from? Cash received from customers who have been billed for services in previous months? A working capital loan from the bank? Or money you may have to invest in the business?

What if your business has seasonal peaks and valleys? Your cash flow statement should reflect them and indicate the amount of cash reserve you must retain from the peak periods to enable you to survive the slow times. In other words, it enables you to project your cash needs and prepare in advance for times when you might need to borrow money, change your billing terms, or pay your suppliers.

Cash flow statements are developed on a 12-month basis, but should be adjusted each month to reflect the actual cash in and cash out during that period. The difference between your cash flow projection and what actually happened is called a variance. As you calculate these variances over time, you will notice trends which will enable you to adjust your cash flows more accurately in the future.

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Layout of the Cash Flow Statement

SOURCES OF CASH	
Cash flow from Operations	
+ Cash flow from borrowing	
= Total cash available in the current period	

USES OF CASH	
Cash drain from Operations	
+ Cash drain from debt reduction	
= Total cash used in the current period	

The difference between **Total Sources** and **Total Uses** is the **Net Cash Flow** in the current period.

PITFALLS

Failure to update records

It is critical to keep your financial records as up-to-date as possible. For example, as you compare your projected cash sales to actual sales on your cash flow analysis, it doesn't do any good if you don't update the rest of your cash flow based on this information. *Therefore, you must update your income and cash flow statements no less than once a month, and sales receipts should be calculated every day.*

Failure to document assumptions

Every financial assumption, from your projected sales levels to your utility bills, needs to be documented. Most expense documentation can be provided as footnotes to your cash flow statement. This will indicate to anyone evaluating your plan that you haven't just pulled numbers from thin air. In the case of your sales projections, detail your methodology in the "Market Share" or "Pricing" section of the plan, and reference the location in the footnote.

Too much optimism

Keep your projections and estimates conservative. It is better to err on the conservative side and possibly borrow a little more money initially, than to run out of working capital because you have failed to achieve unrealistic sales forecasts. If this situation does occur, it will be difficult to borrow additional funds from the bank.

Warning!

The financial information pages cannot be constructed out of thin air. As we have previously said, at an earlier stage in your business plan you need a section which analyzes market, supply and demand, and shifts in prices so that you can show their effects on your business and your intended responses. We repeat: your financial information pages must be linked to this section.

Excuse us for repeating this point, but you should seek the advice of professionals and even the advice of potential funding sources. It's the only way to avoid getting caught up in your enthusiasm.

SAMPLE WORKSHEETS

On the following pages we reprint five worksheets selected from *Inc*. magazine's, *The Service Business Planning Guide*. These worksheets include:

- Start-Up Cost Estimate Statement
- Capital Equipment List
- Sources and Uses of Cash
- Balance Sheet
- Projected Income Statements

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Start-Up Cost Estimate Statement

This statement helps you calculate the amount of funds required to open and maintain your business until your sales revenues can support operations. This first section identifies Pre-Start-Up expenses, including items such as equipment, legal and professional fees, and Grand Openings. The second section identifies other start-up costs and allows for estimating a "financial cushion" to get you through the first few months of business. Some common business expense items have been included. Be sure to expand your worksheet to include all of your specific business needs.

Start-Up Cost Estimate

Pre-Start-Up Items	Estimated Cost
	$
Subtotal	$

Other Start-Up Items	Est. Cost per Month	# Months Coverage	
Salary of Owner	$		$
Other Salaries/Wages/Fees			
Rent/Mortgage			
Advertising			
Delivery			
Supplies			
Telephone/Fax/Postage			
Utilities			
Insurance			
Taxes, Social Security			
Interest			
Maintenance			
Legal/Professional Assistance			
Other			
TOTAL START-UP COSTS	**$**		**$**

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Capital Equipment List

List all the capital equipment you need to buy for your business. Be sure to note any major items with the vendors' names, addresses, and phone numbers. This form will help you to project how much fixed-asset financing you may need.

Capital Equipment List

Item	Description	Quantity	Unit Cost	Total Cost
			$	$
TOTAL COST				$

Notes

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Sources & Uses of Cash

On this worksheet, you must list all individual sources of funds used to start your business and the specific uses to which this money will be put. Sources must *always* equal uses.

Sources & Uses of Cash

Sources	Amount
	$

TOTAL SOURCES: $

Uses	Amount
	$

TOTAL USES: $

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Balance Sheet

A balance sheet is calculated on an annual basis reflecting your business condition as of a particular date. Fill out this balance sheet projected for the day you open your business (*pro forma*). Your specific business may require additional categories, and some of those listed below may not apply to you. Adjust your Balance Sheet accordingly.

BALANCE SHEET
Date:

ASSETS		LIABILITIES	
CURRENT ASSETS		**CURRENT LIABILITIES**	
Cash	$ _____	Notes Payable	$ _____
Accounts Receivable	_____	Accounts Payable	_____
Supplies	_____	Accrued Expenses	_____
Prepaid Expenses	_____		
Other Current Assets	_____	TOTAL CURRENT LIABILITIES	$ _____
TOTAL CURRENT ASSETS	$ _____	LONG-TERM LIABILITIES	
		Installment Debt Payable	_____
PROPERTY, PLANT & EQUIPMENT		TOTAL LONG-TERM LIABILITIES	_____
Land	$ _____	TOTAL LIABILITIES	_____
Buildings	_____		
Equipment	_____	OWNER'S EQUITY	
Vehicles and Boats	_____	Paid-In Capital	$ _____
Depreciation	_____		
		Retained Earnings	$ _____
TOTAL NET FIXED ASSETS	$ _____		
		TOTAL OWNER'S EQUITY	$ _____
TOTAL ASSETS	$ _____	**TOTAL LIABILITIES & OWNER'S EQUITY**	$ _____

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Income Statement

The Income Statement is a record of your business's financial activities over a period of time, and is generally calculated on a quarterly basis. Fill out this Income Statement on a (*pro forma*) basis before you open. You may also complete this statement at various times throughout the year to obtain an idea of your current finances. Your particular business may require additional categories, and some of those listed below may not apply to you. Adjust your Income Statement accordingly.

Company Name _____ Date _____

INCOME STATEMENT

NET SALES (Revenues)		$ _____
OPERATING EXPENSES		
Salaries	$ _____	
Fees	$ _____	
Rent	$ _____	
Telephone & Utilities	$ _____	
Insurance	$ _____	
Advertising	$ _____	
Professional Fees	$ _____	
Office Administration	$ _____	
Depreciation	$ _____	
Travel & Entertainment	$ _____	
Food Supplies	$ _____	
Miscellaneous	$ _____	
Nonincome Taxes	$ _____	
Food Supplies	$ _____	
Miscellaneous	$ _____	
Nonincome Taxes	$ _____	
TOTAL OPERATING EXPENSES		$ _____
OTHER REVENUE		$ _____
(OTHER EXPENSES)		($_____)
INCOME BEFORE TAXES		$ _____

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Chapter Thirteen: INSURANCE

The financial pages of your business plan must include insurance costs. We devote a special section to this subject because small-business owners are often unaware of the options they have in this area. In your business plan, the insurance data may become part of your Financial Information.

Business insurance protects your business against losses from fire, employee injury, lawsuits, theft, automobile accidents, or other occurrences beyond your control. Insurance has also taken on new dimensions in response to record numbers of lawsuits over issues of liability and alleged malpractice.

All businesses need adequate insurance coverage. You must identify the potential risks in your business, then evaluate your insurance options in the context of those risks compared with how much you can afford to pay. Insurance against some risks, such as workers' compensation, is mandatory. Other risks, such as shoplifting, are uninsurable, and still others, such as fidelity bonding, may be desirable.

> Insurance brokers can be helpful in assessing your needs and alternatives. It is important, however, that you evaluate your needs as thoroughly as possible prior to consulting with a broker so that you will be an educated buyer.

It is also important to review your insurance needs on a regular basis. An increase in the value of your assets and the possibility of finding lower premiums in a competitive insurance market are two good reasons to do this annually. Many small-business trade and professional associations offer their members discounted group insurance programs. After you have discussed your needs with an insurance professional, contact a few of these organizations to see what alternative insurance programs they provide.

THE BASICS

Insurance needs can be broken down into three categories: 1) mandatory, 2) essential, and 3) desirable.

MANDATORY INSURANCE

Workers' compensation insurance. If you plan to hire employees on either a full-time or part-time basis, workers' compensation insurance must be secured before your workers start their jobs. Rates for workers' comp are based on the degree of risk associated with the particular job. A hazardous materials handler will have a relatively high rate, while a bookkeeper will have a much lower one. Workers' comp can add significantly to your cost of doing business. The following practices can help reduce costs and potential liability:

Review your job classifications to make sure that each one is included in the least costly category.

- Contact your insurance broker when new employees are hired. Failure to do so will require back premium payments when an insurance company audit is performed.
- If you use subcontractors, obtain a certificate of insurance from them. If they are not insured, you may end up paying the insurance premium on their payrolls.

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- Separate regular pay from overtime pay. Premiums are based on regular pay; overtime pay is excluded.

- Keep your work environment as safe as possible and maintain records of any claims made by your employees. Your rates will be adjusted on the basis of an "experience modification factor" which is computed each year based on your loss history over the three preceding years.

Vehicle insurance. You may be legally liable when employees or subcontractors use your vehicle or their own vehicle on your behalf. If you are using vehicles to deliver merchandise, make sure that they are covered under your policy. A rider may have to be added to the policy to cover merchandise and personal property. It is imperative to carry adequate coverage for both liability and property damage. Although insurance can be expensive, there are several ways to reduce premiums, such as increasing your deductibles and/or buying fleet coverage if you use several vehicles.

ESSENTIAL INSURANCE

Fire Insurance. Fire insurance is essential, unless you are renting or leasing a property that has coverage. In that case, you should check the policy carefully to make sure that the coverage is adequate. If there is a co-insurance clause in your policy, which may reduce the premium, be sure that you understand the implications. For example, if you insure your property for 75% of its value, in the event of a fire you will be responsible for covering 25% of the cost to rebuild.

You may also want to insure against perils such as vandalism, explosion, wind, and smoke. The need for, and costs of, such insurance should be discussed with your broker.

Liability insurance. Liability insurance protects your business from potential losses caused by accidents suffered by others when using your products or services or property. This liability usually extends to both your employees and subcontractors. In recent years, the number of civil lawsuits has been staggering. According to the U.S. Administrative Office of the Courts, in 1993 there were nearly 20 million civil cases filed in state and federal courts, and that number could range as high as 30 million today, with median awards ranging from $40,000 to $625,000. Therefore, it is very important to assess your potential liability and discuss it in detail with your insurance broker before selecting coverage (On the special issue of environmental liability actions against companies involved in recycling, see Institute for Scrap Recycling Industries, Inc., *A Guide to Environmental Liability Insurance Coverage for the Scrap Processing and Recycling Industries).*

Although premiums have increased dramatically for most businesses, you can usually secure an umbrella policy, which provides inclusive coverage for vehicles, liability claims, and personal injury claims, for a single premium. Separate policies must be obtained for workers' compensation, fire, or theft. Even for a small enterprise with low risk factors, liability insurance of $1 million would not be considered high in most cases.

Key-person insurance. If you are in a business that depends on an individual(s) whose skills would be difficult to replace in the short to intermediate term, you should carry life and disability insurance on that person. This policy would be owned by, and payable to, the company and would provide funds needed to operate the business in the short term until the individual is replaced. Key-person coverage is also important as your company grows, to make sure that it has the cash to settle a deceased partner's estate (or a stockholder's estate in a closely held corporation).

Title insurance. If you own real estate, title insurance will protect you against potential claims questioning the validity of your title. Such coverage is generally inexpensive.

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DESIRABLE INSURANCE

Group health insurance. Although it's the subject of great national debate, at this point no employer is required to carry health insurance. However, if you do and you have 20 or more part-time or full-time employees, there are a number of requirements that your plan must satisfy, including provisions for continuing coverage if your employee leaves. Continued coverage is required under the Federal COBRA Act which states that an employee who was covered under a group policy is entitled to health insurance for a period of 18 months after he or she leaves the company (provided such employees apply for the coverage within 60 days of termination). The insurance is normally provided at a higher rate to the former employee, however, and the company is under no obligation to pay any premiums on the employee's behalf. The company is required to maintain the former employee's records throughout the duration of the coverage. Your ability to provide health insurance benefits can offer significant recruiting advantages and help reduce employee turnover. Group policies tend to be significantly less expensive than individual contracts. This possibility should be reviewed in detail with your insurance agent.

Group life insurance. If you offer all employees group life insurance and cover the premiums, up to $5,000 is deductible as a business expense and the value of the insurance is not taxable as income for the employees. Check with your insurance agent to determine the costs and the minimum number of employees required to qualify for the group rate.

Disability insurance. You can purchase low-premium insurance to cover an employee's income for short periods of disability due to a non-work-related injury.

Business interruption insurance. This insurance provides income when your business is unable to operate due to certain circumstances, such as a fire. The premiums for this type of insurance tend to be quite high. Sometimes, because of inability to pay bills and payroll, by the time payment is made on a claim, an owner may have been forced out of operation.

Fidelity bonding. A fidelity bond protects your business against financial losses caused by a dishonest employee. The fact that employees are bonded can be used as a marketing tool. For example, a collection service for recycled items with bonded employees can eliminate potential customer concerns about theft or damage. Obtaining fidelity bond insurance can be difficult for start-up businesses, however, as the underwriter typically looks at a firm's reputation, years in business, and employee-screening methods to determine eligibility.

Special equipment insurance. This covers individual machinery. For instance, you can insure against damage to granulators (or bailers or other machinery) if foreign material falls into a granulator and destroys or damages it.

PITFALLS

Underestimating Insurance Needs

Be sure that you have double-checked your insurance plans and consulted with at least one professional for advice. One adverse liability judgment can easily wipe out your business and personal assets.

The Corporate Veil

Don't get the mistaken impression that just because you are incorporated, you can afford to carry less liability insurance. In some situations, you may find that you can be held personally responsible for claims against your company.

The Fringe Benefit Effect

Insurance can be as powerful a motivator as salary increases, and sometimes more so. Insurance helps satisfy your employees' safety needs and can have a substantial effect on job performance and turnover.

Chapter Fourteen: WHERE TO GO NEXT

After you have completed a satisfactory draft of your business plan, it's time to present it to a lender or investor. The particular approach we recommend at this point is:

- Read the EPA publication, *A Financing Guide for Recycling Businesses*, (September, 1996)
- Read "Financial Resources for Recycling and Waste Management Entrepreneurs," published by Resource Recycling Magazine (April, 1996).
- Take your draft business plan to your local Small Business Development Center for review.

Every state has a Small Business Development Center (SBDC), and there may be a local SBDC office in your community. The SBDC will provide you with the services of a highly-trained business counselor whose task is to:

- ✓ critique and help you improve your business plan;
- ✓ help you link-up with loan or capital sources; and
- ✓ provide further information about loan sources.

Many SBDCs include personnel specially trained in the environmental area.

Personal Contacts

While preparing your business plan, you will also have made personal contacts that now prove useful as referral sources. EPA's *Financing Guide* states: "Always try to have a referral source when contacting a financier, rather than making a cold call. Venture capital partners and active investors often get so many business plans that they do not give them a second look unless the company has been referred to them by a reputable attorney, accountant, entrepreneur or investor (p. 7)." Government agencies and commercial banks are more open, but they too prefer an entrepreneur to have been scrutinized by other financial and legal professionals.

"Shopping" for a Funding Source

Instead of mailing the completed plan to a list of possible sources (more or less assembled from the "Yellow Pages"), you may prefer to use the following three-step process:

Step One: Sort your list of potential resources in order to eliminate sources unlikely to invest in this type of project. Lenders and investors are generally known for the type of project they prefer or dislike.

Step Two: Get a preliminary opinion from the targets you have selected. For example, you can prepare a slightly modified Executive Summary with a cover-letter and cover-sheet, then fax it to selected financial sources. This starts the process of dealing with them smoothly and creates awareness in the mind of the lender or investor. You have avoided making a "cold call" at considerable expense. Some entrepreneurs also call the identified target to introduce themselves personally and let them know they will be sending them the fax. Both techniques are ways of overcoming the pile of business plans waiting to be read. Many lenders will tell you that the project is or is not of interest to them (Console yourself by realizing that at least you haven't wasted a copy of the whole plan!).

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Step Three: Respond rapidly to someone who has received a copy of the Executive Summary and has expressed positive interest. Keep the plan fresh in the lender's mind, perhaps by dropping it off in person and introducing yourself. If the lender or investor rejects your Executive Summary, they will generally explain why. If several sources indicate the same reasons, you may be able to alter the plan to remove whatever is perceived as being "negative."

Financing Sources: General

Debt financing and equity financing are the two main categories of financing.

Debt financing means borrowing money for a fee, generally from personal sources, commercial banks, or government-guaranteed sources. This is the form of financing most often used by start-up companies.

Equity financing means selling partial ownership of the company. Sources include friends and family, private investors, venture capital firms, etc. It is easier for established companies than for start-ups.

Any successful company will use both forms of financing according to need.

EPA's *Financing Guide* lists a wide range of both debt and equity sources available to entrepreneurial companies at both start-up and growth stages. It also includes other sources that are specifically geared to recycling businesses. In terms of categories, these sources are divided into:

- Self-funding
- Private resources
- Commercial funding
- Government financing programs

The Financing Guide also reprints the primary sources of start-up capital for the 500 fastest growing companies described in "The 1995 Inc. 500 Almanac," (Inc. 500, 1995). These are:

Personal savings	54%
Family members	10%
Partners	9%
Angels and friends	6%
Bank loans	6%
Personal Charge cards	4%
Venture capital	4%
Mortgaged property	3%

The lesson is that personal resources (and "sweat equity") are the most likely source of capital at start-up. Even government-guaranteed loans require applicants to provide 30 percent of the loan amount themselves. Be prepared to mortgage your house as collateral for a personal guarantee. If you don't, banks will think you are not seriously dedicated to the project.

Commercial Sources

In terms of debt financing, *commercial banks* are the main source of loans for small businesses, though a prospective borrower should identify those financial institutions familiar with the recycling industry or at least with high technology companies. Many banks find these areas too risky, or they consider the specialized equipment to be illiquid collateral.

Both SBDCs and the U. S. Small Business Administration (SBA) can help you identify commercial lenders friendly to small businesses of this type. An article in the April 1996 issue of Resource Recycling Magazine, lists retail and investment banks which favor environmental loans (pp.3, 4) Resource Recycling also suggests that commercial mortgage brokers can assist with finding lenders for real estate, and that utility companies have an interest in this area.

In terms of equity financing, *private individual investors* ("angels") are better sources than venture capital firms. They invest as much as $20 billion annually in 30,000 ventures, and they are, for the most part, owners or managers of businesses. They usually invest because of an affinity for a company, its founders, its technology or its business area. Individual investors can provide a great deal more than money—they can offer expertise, contacts, business partnerships, etc. EPA's *Financing Guide* describes how to identify and contact them.

Venture capital firms are more willing than traditional lenders to invest in high-risk operations, but they also look for an annual investment return of 20% or more. They currently manage about $30 billion. Of the more than 500 venture capital firms in the U. S., some 20 to 30 have environmental interests and some 2 to 3% of venture capital funds go to environmental projects (see further, Resource Recycling, pp. 5-6). Remember, venture capitalists are looking for companies that will ultimately go public, and very few start-up recyclers have this potential.

For further information, read both documents we have recommended. The sources of private funds endless, and there are many ways of locating them—networks, databases, listings, and forums, as well as the public stock exchanges. A number of recycling businesses have expanded by selling stock. Resource Recycling lists examples in plastic lumber, appliance recycling, composting, cellulose insulation, recycling equipment, plastics recycling and roofing recycling.

Finally, asset-based loans and leasing may be successful avenues for financing equipment. Ask your advisor

Government Sources

A wide variety of government sources also exist, most of them administered through commercial banks in the form of loan guarantees. In particular, there are SBA-guaranteed loans intended specifically to foster small businesses at both start-up and growth stages.

You should contact your SBDC for current information about these sources since their preferences and programs change according to Federal priorities and vary from state to state.

Federal agencies that have provided loans, loan guarantees, and even grants in the area of recycling include the U. S. Department of Energy, the National Institute of Standards and Technology, the Small Business Administration, the Farmers Home Administration, the U. S. Department of Agriculture, and the U. S. Department of Housing and Urban Development. *Their funding programs and priorities change from year to year, and their requirements are complex. SBDC counselors can inform you of current programs.*

In the last decade or so, federal funds have often mingled with state funds. For an example of the variety this creates, we recommend studying *A Business Guide to Recycling Market Development*, from the Minnesota Office of Environmental Assistance. It thoroughly describes, in Minnesota, the agencies that may exist and who provide similar opportunities in your state. They include:

- Certified Development Companies;
- Community Development Corporations;
- Departments of Trade or Economic Development;
- Regional Development Commissions; and
- Departments of Environmental Assistance.

Do not expect these agencies to be direct sources of funds. Their task is to foster the development and growth of businesses such as yours, and they can identify special incentive programs that may be of assistance. A few states provide loans and grants specifically intended to foster recycling and the use of recycled products. You can obtain information from your state department of environmental protection and from your local or regional economic development agencies.

Recycling Investment Forums

In conjunction with the Recycling Advisory Council, the regional offices of the EPA sponsor a nationwide series of Recycling Investment Forums, which bring entrepreneurs together with investors, financiers and economic development agencies. They are described in detail in EPA's *Financing Guide,* Chap. Four.

The forums are a serious (and substantial) effort to bring investors and entrepreneurs into communication. They are aimed at the recycling industry only, and at existing companies as well as start-ups.

Many other investor/entrepreneur meetings occur throughout the country. Chapter Five of their *Financing Guide* gives detailed information. They tend to be annual events, and they "typically select high-growth companies that may have appeal to professional venture capital, corporate or private individual investors (p. 37)."

The same chapter describes *investment network*s, which match investors' interests with companies seeking additional capital.

Financial Needs

Every business engages in the exercise of raising funds, regardless of size or business stage. Start-up funds are more difficult to acquire than expansion funds. Your sources for financing will change according to the stage of your business, and so will your financial needs.

Every financing guide warns that no single source of funds will suffice a business throughout its existence. Financing is a stage-by-stage process that responds to your business's needs. As EPA's *Financing Guide* puts it, "At each stage of company development, the firm only needs to attain the funds to achieve the next milestone while paving the groundwork for future financing rounds."

Conclusion

We do not discourage you from using the services of professionals in the creation of your business plan. However, you should realize that no reputable professional will create a plan for you without your total involvement. Regardless of who actually writes and organizes the plan, the business and the responsibility will be yours. You have to understand the whole plan, in detail, in order to take it to a lender or investor.

We'd like to conclude by saying that the art of obtaining financing is a skill every businessperson needs. This first business plan is likely to be the first of many. We recommend that you expect to spend as much as a year in preparing it, writing it and amending it. You are not so much writing a document as learning a broad skill that will determine your lifetime success in business.

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Section 2: Sample Business Plans

This Section contains three sample business plans, one for each feedstock. You should glance through all three plans to examine how they have

- approached the overall goal of securing financing;
- included any of the 14 individual elements covered in Section One.

DO NOT USE THE TEXT OF THESE PLANS SO AS TO MAKE IT YOUR OWN. THEY ARE PROPRIETARY MATERIALS.

Every business plan must be unique in order to respond to time and place. These plans are merely examples. Some of the information has been deleted. Some of the information is out of date. They were written at various times and places in the last five years. All have been edited to disguise the actual company that submitted them.

The three plans are as follows:

Plastics
Greenwave Recycling Systems, Inc.

Glass
Glassteks, Inc.

Rubber
Earthbound Tire Reclamation Company

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Green Wave Recycling Systems, Inc.
Plastic Reclamation Center

Sample Business Plan #1

Business Plan
July 1993

This Business Plan is the property of Green Wave Recycling Systems, Inc. Because it contains confidential information proprietary to Green Wave Recycling Systems, Inc., no copies may be made whatsoever of the contents herein nor any part thereof, nor should the contents be disclosed to any party not previously authorized to discuss said contents by Green Wave Recycling Systems, Inc. officers. This copy must be returned to Green Wave Recycling Systems, Inc. upon request.

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Summary

Green Wave Recycling Systems, Inc. is a company in the plastic's reclamation field that is responding to the need for plastic molders to increase recycled plastics in their products. The company was founded in July 1993 by Bob Green and Ron Wave with the commitment of their personal funds.

The Product

The products are reclaimed post-consumer plastics that have been restored to manufacturing quality. The first product is PET flake. This plastic is reclaimed from post-consumer soft drink bottles. This plastic is returned to the manufacturing process for use in carpet, bottles and strapping. The second product is HDPE flake. This plastic is reclaimed from post-consumer milk containers. This plastic is returned to the manufacturing process for use in bottles, shopping bags and containers.

Field Evaluation

The reclamation equipment used is employed in nine different locations in the United States. These include California, Massachusetts, Florida, Ohio and New Jersey. Each of these facilities produces reclaimed plastics that are 99.999% pure. Their product commands a premium price in the reclaimed plastic market due to its purity.

The Market

Manufacturers of plastic products are rapidly increasing their use of recycled plastic in the products. This is due to the increasing legislative pressures to ban plastics from landfills, increased consumer awareness of recycled products, and the lower cost of recycled plastics over virgin resins.

Production

Reclamation of plastics will be accomplished by grinding, washing, separating and drying post-consumer clear PET and HDPE bottles. As the company grows, the reclamation process will be expanded to include colored soda, oil, shampoo, and other post-consumer PET and HDPE bottles. In addition, an extrusion process will be added to produce higher margin plastic pellets.

Distribution

Reclaimed plastic will be sold to manufacturers of plastic products and virgin resin producers. These will include manufacturers of carpeting, blow-molded bottles, injection-molded bottles, plastic sheeting, containers and toys. Focus will initially be placed on manufacturers that are geographically close to maximize customer assurance efforts.

Financing Required

The company needs $1.6 million to fund the construction of a reclamation center, installation of reclamation equipment and implementation of a manufacturing plan to produce 1.2 million pounds of reclaimed plastic per month. In addition, the company needs to obtain eight hundred thousand dollars in working capital to fund expenses during the first year of operation.

The Product

The products are reclaimed post-consumer plastics that have been restored to manufacturing quality. The first product is PET flake. This plastic is reclaimed from post-consumer soft drink bottles. Post-consumer feedstocks are often commingled with mud, paper, aluminum bottle caps and organic debris. The soft drink bottles will be processed through a series of steps that will grind, wash, separate and dry the finished product. The American Plastics reclamation process will produce flaked PET plastic that is 99.999% pure. This purity has been demonstrated at American Plastics' nine other plastic reclamation sites and is widely accepted in the industry. Purchasers of recycled plastic flake consider reclaimed PET from the American Plastics reclamation line to be the purest available in the United States. As such, this product generates a premium price among buyers. Typically, manufacturers are paying between 50 to 60 cents per pound of this reclaimed plastic. This contrasts very well with the fact that the same manufacturers pay 65 to 70 cents per found for virgin PET flake.

The second product is HDPE flake. This plastic is reclaimed from post-consumer milk containers. As with the PET feed stock, HDPE feed stock is often commingled with mud, paper, PVC, bottle caps, and organic debris. The milk containers will be processed through a series of steps that wil grind, wash, separate and dry the finished product. Again, the American Plastics reclamation process will produce flaked HDPE plastic that is 99.999% pure. American Plastics has demonstrated this purity level consistently at the nine other plastic reclamation sites in the United States. The extremely high quality reclaimed HDPE flake from the American Plastics reclamation line commands a premium price among manufacturers. The average price per pound being obtained by the other nine American Plastics installations is 31 cents per pound. This contrasts with an average price of 40 cents per pound for virgin HDPE flake.

Future product plans include the extrusion of pelletized HDPE plastic, extruded plastic lumber from commingled plastic and the injection molded containers. This product offering will be evaluated for implementation over the next five years.

Pelletized HDPE commands a 20 cent per pound premium over HDPE flake. While the increased margin is attractive, the production process requires an additional $400,000 in capital and an investment in extrusion expense. It is felt that this product could be offered within the next three years.

Extrusion of plastic lumber from commingled plastics results in the production of consumer products from otherwise unrecyclable plastics. This process grinds, melts and forms various format dimensional "lumber" from unrecoverable plastic. The lumber can be utilized in place of traditional wood lumber for less money. However, there are market biases that will need to be overcome. It is felt that this product line could be offered within the next five years.

Green Wave Recycling Systems can eventually leverage its strong base in high quality reclaimed plastics to begin the production of injection molded consumer goods. These goods include various household containers as well as industrial containers. By leveraging its own low cost reclaimed plastic, margins can be passed on to the consumer products. It is felt that this product line could be offered within the next five years.

The Market

Manufacturers of plastics' goods are dramatically increasing their use of reclaimed plastics in their production processes. They are demanding high quality reclaimed plastics for their consumer products. To date manufacturers have only been able to obtain sufficient reclaimed plastic to replace 10 to 35% of virgin resins used in their products. They are actively encouraging local recycling efforts to increase the availability of reclaimed plastic. Manufacturers have four main interests in maximizing their use of reclaimed plastics:

1. Reclaimed plastics offer a way to reduce their manufacturing costs.
2. Consumers are beginning to show a preference for environmentally aware manufacturers.
3. Many states have mandated a timetable to eliminate plastic from the waste stream.
4. Anticipation of a federal mandate to include recycled materials in their finished goods.

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The PET Market

The Center for Plastics Recycling Research indicates that last year 14.3 billion pounds of PET resin was used in the United States. The textile industry used 4.2 billion pounds and consumer packaging used 3.2 billion pounds. In 1987 150 million pounds of reclaimed PET were used in place of virgin resins. That has grown to approximately 695 million pounds in 1993. In 1991 both PepsiCo Inc. and Coca-Cola Co. announced that they would begin to incorporate reclaimed PET in their bottles. This opened a market for an additional 750 million pounds of reclaimed PET. In 1992 Twinpak, Inc., Canada's largest PET bottle maker, announced plans to use reclaimed PET in their bottles in 1993. Textile manufacturers have increased the amount of reclaimed PET in their polyester carpets to more than 35%. The demand for reclaimed PET has driven today's prices to within 10% of the price of virgin resin. Research by the Council for Solid Waste Solutions indicates that PET's scrap value is only second to aluminum among container materials. The Center for Plastics Recycling Research projects that the market for reclaimed PET will grow between 11 and 17 percent annually. The Freedonia Group, a Cleveland based research group, estimates that by the year 2000 the demand for reclaimed PET will have grown to 1.4 billion pounds annually.

The HDPE Market

The Center for Plastics Recycling Research at Rutgers University estimates that the United States will use 11.7 billion pounds of HDPE in 1993. Of this, 4 billion pounds will be used for blow-molded bottles and containers, 2.3 billion for extruded film and pipe, and 2.5 billion for injection molded caps, crates and pails. Of the total, 6.6 million pounds will be reclaimed HDPE. This has grown from 4.4 million pounds in 1987. This represents an annual growth of 7%. The Freedonia Group estimates that the demand for reclaimed HDPE will grow to 3 billion pounds per year by the year 2000. Currently the demand for reclaimed HDPE has pressured major bottle users such as Lever Brothers to run advertisements on their bottles encouraging recycling of HDPE. Injection molding uses the largest portion (38%) of reclaimed HDPE. This is followed by blow molding at 30% and extrusion at 25%.

The Marketing Plan

Green Wave Recycling Systems, Inc. will focus its marketing efforts on quality plastic flake produced at a reasonable cost and in reliable supply.

It is the intent of Green Wave Recycling Systems, Inc. to enter into long term supply contracts with major consumers of reclaimed PET and HDPE. The sales of the reclaimed flake will be conducted via personal sales efforts. American Plastics has agreed to process a sufficient quantity of material in the demonstration plant to be used as samples to provide prospective clients. Initially, brokers will be used while a customer base is built. Although this will reduce the product margins slightly, it will provide an immediate strong cash flow and exposure to prospective clients. The product will be offered at slightly below the market price to targeted potential clients to try the product. The primary product emphasis will be on the high quality and reliable volumes provided by Green Wave Recycling Systems, Inc.

The Production Plan

The production plan calls for the construction of a facility, installation of a processing line and training of employees. The construction of the facility is estimated to take three months to construct a 20,000 square foot, insulated metal building. Once construction is complete, American Plastics will install the processing line and the material handling system. American Plastics estimates that installation of the equipment will require two weeks. One month prior to the completion of the line, the staff will be interviewed and hired. American Plastics provides two weeks of training on the operation of the line. This includes shutdown, startup, cleaning, and maintenance. Processing of plastic will begin at the conclusion of training under the supervision of American Plastics. American Plastics will maintain staff on site to assist in the operation of the line for one month. It is anticipated that by this time, Green Wave Recycling Systems, Inc. will have the processing facility running on one shift per day, seven days per week. One shift per week will be used to shutdown the processing line and conduct periodic maintenance.

The Facility

The production plan calls for the construction of a 25-foot tall 20,000 square foot facility to reclaim the plastic. This facility is large enough to house the reclamation line, two day's storage of finished product, and company offices. This size facility also offers adequate room for growth over the next three years. The facility will be surrounded by a chain-link fence with one guard on duty at all times.

The facility will house three separate truck ramps. One will be used to load the finished products packed in gaylords (64 cubic foot square containers) and the second will be used for off-loading bailed feed stock. The third will be used for off-loading loose bottles collected locally. Two forklifts and one bobcat will be employed for loading and off-loading materials. The fork lifts will be used for handling the gaylords and bailed feed stock. The bobcat will be used to load loose plastic into the reclamation line.

Offices will be housed within the building. The office space will be composed of a reception/secretarial area, three offices and a conference room. The offices will reside on the second floor of the facility. Beneath the offices there will be a break area with kitchen accessories, a locker room, and restroom facilities. In addition, there will be an enclosed maintenance area that will house the required tools and maintenance equipment.

The Production Line

The reclamation line will be purchased from American Plastics. This system will be composed of a bail breaker, a sorting platform, two shredder/grinders, three closed-loop wash systems, a dryer, and a hydro-cyclone material separator. Either baled or loose feed stock will be feed into the line. Baled stock will be loaded by a forklift into a bale-breaker. The bale will be broken open and separated into the original plastic bottles. From here, the bottles will be feed via conveyer to a sorting platform. Loose feed stock will be fed directly onto a conveyer to the sorting platform.

On the sorting platform bottle sorters will separate the colored plastic from the clear plastic. The Council for Solid Waste Solutions has determined that one person can reliably sort plastic at a rate of 500 pounds per hour. Green Wave Recycling Systems, Inc. will employ six individuals per shift to handle sorting. Although the line is rated for 2,000 pounds per hour, this will allow coverage for breaks, meals, and skill training. Colored plastic will be picked from the line and diverted into a holding bin. The clear plastic will be left on the line and allowed to flow into the shredder/grinder.

Green Wave Recycling Systems will use two grinders. One will be on-line while the other is undergoing blade sharpening or is in stand-by mode. As the plastic is ejected from the shredder/grinder, heavy waste products will be separated from the stream. Labeling paper, aluminum from caps, and non PET/HDPE plastics will be separated from the stream.

The flaked PET/HDPE mixture is channeled into a wash system. There are three parallel closed loop wash systems. This system will remove any glue, dirt, organic material or debris left on the flaked plastic. The wash systems are closed loop and require no flushing and therefore generate no waste water. They do filter debris from the water and the filters are changeable without flushing the system.

Once the product is cleaned it enters a hydro-cyclone separator. This process separates the PET and HDPE flakes by specific gravity. It also removes any plastic flakes that have debris embedded in them. The separated HDPE and PET flow on separate paths to dryers.

In the dryers, the flakes are mixed with heated air to dry them. Once dry, the finished product is channeled into surge bins. Here the product awaits final packaging in the gaylord containers. Once packaged, the gaylords are stacked and await transport. Green Wave Recycling Systems, Inc. has planned to accommodate at least three days of interior storage capacity for the gaylords.

The colored plastic separated from the line will be baled and sold as is. While the margins for clean flaked colored plastics are narrower that clear, it is anticipated that within the next three years the line will be expanded to flake and clean colored plastics.

The Collection of Feedstock

It is critical that Green Wave Recycling Systems build a reliable supply network of postconsumer plastic. This is to ensure the ability to meet client's requirements as well as check competitor's request for raw materials. This will be accomplished by focusing efforts in three main areas:

- Partner with or develop community drop-off recycling programs.
- Partner with local business to provide recycling drop-off sites.
- Forge ties with communities within the region to develop curbside collection programs.

Gilliam Sanitation has been very successful in organizing curb-side pickup programs in Jefferson County. Green Wave Recycling Systems, Inc. has reached an agreement with Gilliam Sanitation that Gilliam will include plastics in their curb-side programs and provide them solely to Green Wave Recycling Systems, Inc. The Council for Solid Waste Solutions estimates that curb-side pickup captures 90% of post-consumer plastic. This will provide Green Wave Recycling Systems with access to postconsumer plastics in Festus, Crystal City, Pevely and Herculaneum. Federicktown, Flat River, Bonne Terre and Cape Girardeau all offer potential sources for post-consumer plastic to the south. Green Wave Recycling Systems, Inc. intends to help establish curbside collection in these communities or to establish community collection / densification sites. Transportation costs from these potential regional densification centers are low enough to maintain very aggressive margins.

Green Wave Recycling Systems has also held preliminary negotiations with Louchs, Fireburghs, Collin Groves and Save-A-Lot. All are willing to reinstate their plastic's collection program when Green Wave Recycling Systems, Inc. brings their facility on-line. These organizations had previously ceased collections because the area lacked a reclamation center to process the plastics. Green Wave Recycling plans to continue this approach by negotiating similar arrangements with Wal-Mart, Venture, and malls in the area.

Green Wave Recycling Systems, Inc. has held discussions with the communities of Webster Groves, St. Peters and Kirkwood. All have community collection centers and all are very interested in including plastics in their efforts. Springfield, Missouri is well known for their curbside recycling efforts.

Green Wave Recycling Systems, Inc. intends to explore the opportunity to handle their post-consumer plastic.

The following table represents the volume of plastic Green Wave Recycling Systems, Ine. expects to develop upon facility startup.

Materials Suppliers	**Lbs./Month**
Astuson	203,571
Blaine	203,571
Diamond City	67,857
Derkly	67,857
Louchs	162,857
Fireburghs	122,143
Grand Junction	101,786
Spend-A-Lot	89,571
Collin Groves	81,429
St. James	40,714
Drywood	40,714
Safeway Recycling	40,000
Total	**1,222,071**

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Green Wave Recycling Systems, Inc. intends to continue to forge ties with businesses and communities across the state. Within two months of reclamation facility going on-line, Green Wave Recycling Systems, Inc. will launch an advertising campaign alerting the targeted communities of the facility announcing the recycling of post-consumer plastics. This campaign will consist of:

- Direct mail brochures announcing the collection of plastic in the target areas.
- Newspaper articles announcing the plant opening.
- Establishment of a 1-800 information line to answer plastic recycling questions.
- Direct mail brochures describing the Do's and Don'ts of plastic recycling.
- Promotional events conducted with the community business partners.

The Council for Solid Waste Solutions has determined that consumer participation in a collection program quickly becomes a matter of habit. They have found that direct mail brochures informing residents that plastics were being collected in their neighborhood, the kinds of plastics currently being accepted, and how to prepare plastics for collection provide the greatest impact. In addition, bin hang tags will be attached directly to the recycling containers indicating which plastics are being collected. The Council has made available educational materials that will be focused at the area school districts. Recycling awareness programs will be set up with the local school systems utilizing these materials as well as field trips to the reclamation facility.

Green Wave Recycling Systems, Inc. has contracted with regional recycling collectors to ensure that the reclamation facility will have sufficient feedstock upon startup.

The Staffing Plan

The facility will be staffed seven days a week, three shifts per day. One shift per week will be used to bring the line down for periodic maintenance and cleaning. During the facility start-up phase staffing will be ramped up from one shift per day up to a full staff on three shifts per day. This transition process will occur over a three month period. During the first month one shift will be run to familiarize the staff with the line. During the second month, team leaders will be promoted to train the second shift staff. The third month will see the third shift brought up in a similar fashion.

The following table outlines the fully staffed organization and projected monthly salaries.

Position	Staffing Level	Monthly Salary
Plant Administrator	1	$4,583
Sales/Buyer	1	$4,583
Maintenance/Quality Supervisor	1	$4,583
Secretary	1	$2,432
Shift I		
Technician	1	$3,648
Forklift Handler	2	$5,837
Bottle Sorter	6	$14,592
Guard	2	$5,837
Shift 2		
Technician	1	$3,648
Forklift Handler	2	$5,837
Bottle Sorter	5	$12,160
Guard	2	$5,837
Shift 3		
Technician	1	$3,648
Forklift Handler	2	$5,837
Bottle Sorter	2	$4,864
Guard	2	$5,837
Part Time	7	$17,024

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The Management Team

Resumes in Appendix A outline the details of Green Wave Recycling Systems, Inc. founding management team. Each member of the team brings unique and valuable expertise to the company.

Bob Green has eleven years experience in managing large projects. His positions with MonDale-Williams, Kal-Kan and Bullocks have involved the development and implementation of projects that have been national in scope. Bob has consistently delivered the projects on time and under budget. Bob has developed Green Wave Recycling Systems, Inc. business plan and will be responsible for managing the company to the plan. Brian will also be responsible for the implementation of the collection plan. Other responsibilities will include managing the logistics of the facility to ensure timely delivery to clients as well as maintaining an adequate supply of feedstock on hand.

Joe Wave brings his tremendous experience in process manufacturing at PPG with him to Green Wave Recycling Systems, Inc. His experience with the development, implementation and management of process manufacturing lines ensures that Green Wave Recycling Systems, Inc.'s reclamation line will be installed and operated in the most efficient manner possible. Mr Wave's experience with managing quality control will aid the production staff in maintaining high standards of product purity and quality. Mr. Wave's primary responsibilities will include the implementation and operation of the production line; the equipment maintenance plan; and the implementation of quality focus groups.

Green Wave Recycling Systems, Inc. recognizes that the company's success depends on the talents of others as well. Green Wave Recycling Systems, Inc. has contracted with Steve Eubanks and Associates to establish an appropriate accounting system and procedures. They will also perform regular audits to ensure that the company's accounting procedures are implemented correctly.

The Capital Plan

Green Wave Recycling Systems, Inc. requires both capital for asset acquisition and operating capital to fund operations for the first year. Initial capital will be secured by the property acquired to locate the reclamation facility, the building constructed, the processing line and various office assets. The operating capital is to be guaranteed by the SBA. The asset capital loan is estimated to be paid off over a twenty year term. The operating capital is planned at a five year pay off. The company will have a positive cash flow by month ten. Once into the second year, sufficient cash flow will be available to repay the operating capital note on an accelerated schedule as well as fund expansion on a cash basis.

The Capital Plan

Equipment American Plastics HDPE and PET Reclamation Line.	$900,000
Building 20,000 Sq. Ft. Building with 2,000 Sq. Ft. Office Space.	$340,000
Property 10 Acres on Workman Drive next to Lux Con.	$200,000
Trucks 1 Pickup Truck (used) 1 Flatbed (used)	$30,000
Gaylord Shinning Containers	$5,000
Fork Lifts 2 Forklifts (used) 1 Bobcat (used)	$37,000
Maintenance Tools	$25,000
Bailer	$8,000
Office equipment Copier 5 Personal Computers Fax Telephones 7 Pagers Cellular Phone 4 Desks & Chairs 4 File Cabinets 3 White boards 1 Conference Table 8 Conference Room Chairs	$40,000
Total	$1,585,000

The Operating Capital Plan

The following table outlines the operating capital requirements for the first eight months of business.

Cost of Sales Months 1 to 8		**$725,040**
Operating Expenses Months 1 to 8		
Administration	$8,400	
Advertising	$1,920	
Fuel	$2,000	
Insurance	$20,000	
Maintenance	$21,000	
Office	$19,200	
Payroll		
Sorters l Fork Drivers	$196,506	
Supervisor	$18,333	
Shift Technicians	$29,184	
Guards	$78,797	
Management	$194,503	
Employee Benefit	$87,705	
Debt Service		
Operating Capital	$137,014	
Equipment	$112,142	
Building	$74,354	
Chemical Supplies	$60,000	
Utilities	$80,344	
Promotion	$7,000	
Total Operating Capital Months 1 to 8		**$1,856,163**
Less Total Sales Months 1 to 7		**$817,380**
Net Operating Capital		**$1,038,783**

Assumptions

1. The Operating Capital will be funded by an SBA program.
2. Repayment is planned on a 5 year basis at 10%.
3. No payment will be required for the first six months.
4. Employee benefits are calculated at 20% of the salary base.
5. Maintenance dollars are funded on a monthly payment to a maintenance reserve. Actual maintenance
6. Expenditures will vary from month to month.
7. Debt servicing of the Asset Capital will be prorated based upon the monthly draw.

Assumptions

1. Capital Assets will be funded by the SBA 504 Program
2. Repayment will be over a 20 year term with an interest rate of 10%.
3. The building will be an insulated metal building with heating for winter and ventilation for summer.
4. Air conditioning will be installed for the offices and break rooms.
5. The break room will be supplied with a microwave oven, refrigerator, television, vending machines, dinette, and lounge chairs.
6. Cars will be used for sales efforts and establishment of collection programs.
7. Trucks will be used for maintenance efforts.
8. Grounds keeping equipment will be acquired for maintenance of the facility grounds.

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Potential Risks and Problems

There are four main areas where Green Wave Recycling Systems, Inc. may face potential problems. These are insufficient feedstock, insufficient production, insufficient sales and inadequate distribution. Green Wave Recycling Systems, Inc. has considered each of these areas in the business plan. Green Wave Recycling Systems, Inc. believes that they have a viable plan with contingencies to address each area of concern.

The problem of insufficient feedstock is the single most critical area of concern. The financial performance of Green Wave Recycling Systems, Inc. is dependent on sufficient inflow of post consumer plastic to maintain the reclamation line producing a minimum of 1.2 million pounds of plastic flake per month. The Council for Solid Waste Solutions believes that this is achievable by leveraging the existing curbside collection efforts that exist within a 50 mile radius of the facility. While Green Wave Recycling Systems, Inc. has agreements with key business partners to accomplish this, the company intends to aggressively expand its collection network throughout the state of Missouri. This will position the company against failure of a single collection partner as well as protect against competition for collected post consumer plastic.

Maintaining the production volume at a maximum level is also dependent on the availability of the production line. It is Green Wave Recycling Systems, Inc.'s plan to provide for redundancy and adequate downtime for preventative maintenance in its business plan. The equipment plan calls for triple redundancy of the most maintenance dependent equipment. In addition, on-site spare parts will be maintained along with a fully stocked maintenance shop. American Plastics has agreed to providing substantial education of Green Wave Recycling Systems, Inc.'s maintenance staff. They are also able to provide spare parts within twenty four hours police. Even though existing reclaimers have stated that their lines are only inactive 5% of the month, the business plan allows for the line to be inactive for 20% of the month.

Personnel are key to the success of Green Wave Recycling Systems, Inc. The company's plans recognize that the plant personnel are key to the success of the company. In recognition of this, Green Wave Recycling Systems, Inc. intends to provide a workplace where responsibility and compensation are intrinsically linked. Green Wave Recycling Systems, Inc. will provide a safe work environment for its employees by requiring equipment training, enforcing safety regulations and conducting drug screening. The company will also implement a benefits package for the employees that is structured to their needs. As the company grows it will share its prosperity with the employees.

Insufficient market demand is a remote possibility for the industry today. Green Wave Recycling Systems, Inc. is positioned to shift its production to address new market trends. The reclamation line is designed to process all types of plastic. Should market demand fall in one type of plastic, Green Wave Recycling Systems, Inc. can shift its production to meet the requirements of other segments in the market. In addition, when new markets emerge, the reclamation line can be shifted to address new opportunities. The company's initial interface with the market will be through brokers and exporters. While the company will develop direct customer relations, the brokers will continue to offer a place for any excess production. In addition, the brokers will offer an early warning mechanism for detecting shifts in the needs of the markets.

Local trucking companies and independent truckers will be used for distribution of the product. This will offer Green Wave , Inc. the greatest flexibility for distribution. As a customer base is built, truck lines that focus on those areas will be utilized to reduce back haul costs. The company is also prepared to use rail and barge to transport product to the customer. Green Wave Recycling Systems, Inc.'s location in Jefferson County offers the widest latitude in distribution systems. From this area, the company can utilize any of these mechanisms to deliver product.

Green Wave Recycling Systems, Inc. is well positioned to meet market demands for reclaimed plastics. The company's location makes it ideal to collect, process and deliver product to clients. Green Wave Recycling Systems, Inc. is well positioned to become the leader in plastic recycling in Missouri and a major contributor to the local community.

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Appendix A - Management Resumes

Bob Green
P.O. Box 123
Jonesdale, Montana 63627
(314) 987-5499

Qualifications Summary Over twenty-five years of experience in technical and supervision of all phases of flat glass manufacturing fabrication and shipping. Successfully self-employed with Earth Stations of Missouri for two years.

Work History

1991 - 1993 Co-owner of John Place of Montana.
John Place of Montana is a retailer of high technology consumer electronics. Responsibilities include the installation and service of high technology consumer electronics.

1966 - 1991 RGJ Industries. Inc.
A manufacturer of flat glass products.

Production Supervisor (1990 - 1991)
Responsible for supervision of production teams involved in the cutting and packaging of finished glass products.

Senior Process Control Technician (1981 - 1990)
Responsible for maintaining production quality levels throughout the entire production process of several plants.

- Member of the PPG Research Division trouble shooting team.
- Team Leader of the research department.
- Analyzed installed/supervised a new manufacturing process at two plants.
- Manager of the Research Division's research work teams.
- Managed the PPG inter-plant technology transfer program.
- Supervisor of plant safety programs for major construction efforts.
- Coordinated with the EPA chemical testing laboratory.

Process Control Technician (1972 - 1981)
Assisted in developing and implementing manufacturing and evaluation methods for new products.

- Trained all quality control technicians on new product manufacturing processes.
- Developed a process control which substantially reduced manufacturing costs.
- Member of the PPG Fire Brigade / Emergency Response team.

Quality Control Technician (1966 - 1972)
Supervised various teams in all areas of product manufacturing.

Education
Graduate of Business Institute of St. Peters, Jonesville, Montana
Two semesters Business Administration, Thompson College, Ridelsboro, Montana
Certified by Joseph Williams & Associates, Quality Improvement Process

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Joe Wave
Pebble River Estates
Billings, MO 63028
(314) 987-6785

Current Position: Sr. Telecommunications Analyst

Summary of Eminence

Bullocks Department Store	Project Manager	PC based Merchant's Workbench
(1990 to Present)	Project Manager	National Telecommunications Consolidation
	Project Manager	Remote Buying Meeting Order Entry Project
	Project Manager	National Executive Communication Network
	Project Manager	Bridal Registry Kiosk
	Project Manager	Merchant Executive Information System
	Project Manager	LAN based Corporate Reporting System
	Project Manager	Legal Department Automation System
Kal-Kan	Project Manager	Legal Department Automation System
(1985 to 1990)	Project Manager	Marketing Information System
	Project Manager	Publishing Automation System
MonDale-Williams	Project Manager	Government of Israel Facilities Management
(1982 to 1985)	Programmer/Analyst	PC Communications Software
	Programmer/Analyst	Centel Telephone Support System

Responsible for developing a set of laptop PC tools to enable Merchants to formulate purchase orders, store distributions, and price changes. The system uploads these documents to the mainframe systems. This system is composed of divisional OS/2 LANs remotely bridged to IBM and Tandem mainframes at regional data centers. This project reduced the lead time for orders and price changes from twelve days to two days.

The national telecommunications consolidation project is a merger of three national networks: IBM, Tandem, and PC WAN. Responsibilities include the design and architecture of a WAN platform that consolidates IBM SNA traffic, Tandem POS and Credit Authorization traffic, and PC WAN traffic. This project reduces network channels from over 1,000 to under 50 and reduces bandwidth requirements by 40%.

Responsibilities for the National Executive Communication Network included the design and implementation of a national OS/2 WAN connecting 13 divisions and four data centers. This network allows company senior management to exchange spreadsheets, documents, and scanned images rapidly and with publishing quality.

Management of the remote buyer meeting order entry project included the design and development of an application to allow merchants to enter order information from their divisions while participating in national buying teleconferences. This is an OS/2 client-server application that updates a central LAN database. It also is integrated to the video broadcast system to inform all divisions of the profile of the current order.

Responsibilities for the Bridal Registry Kiosk include designing and managing the development of an application to allow customers to select and print bridal registries without store associate intervention. The kiosk is a DOS based, multimedia application that interacts with the Tandem based bridal registry system. The system's touch screen allows the customer to point to screen based cues for information entry. Bullocks has deployed the Bridal Kiosks in 80% of the stores.

Education

Bachelor of Science - Computer Science 1982
Southeast Montana State University

Plastic Recycling Year One													
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Summary	$ per Lb.
Income														
Sales														
Natural HDPE Flake						$36,936	$73,872	$73,872	$73,872	$73,872	$65,664	$57,456	$455,544	0.12
Natural HDPE Pellet						$0	$0	$0	$0	$0	$17,100	$34,200	$51,300	0.25
Colored HDPE						$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$574,560	0.12
Natural PET						$116,964	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$1,520,532	0.38
Colored PET						$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$670,320	0.28
Total Sales						$331,740	$485,640	$485,640	$485,640	$485,640	$494,532	$503,424	$3,272,256	0.215
Cost of Sales														
Natural HDPE (Bales)					$23,940	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$359,100	0.07
Natural HDPE (Ground)					$0	$0	$0	$0	$0	$0	$0	$0	$0	0.09
Colored HDPE					$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$109,440	0.02
Natural PET					$23,940	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$359,100	0.07
Colored PET					$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$136,800	0.05
Freight					$51,300	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$554,040	0.03
Total Cost of Sales					$129,960	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$1,518,480	0.1
Gross Profit From Sales					($129,960)	$133,380	$287,280	$287,280	$287,280	$287,280	$296,172	$305,064	$1,753,776	0.1155
Operating Expenses														
Administration	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$11,200	0.0007
Office Expense	$240	$240	$240	$240	$240	$240	$240	$240	$240	$240	$240	$240	$2,880	0.0006
Advertising	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$14,100	0.0009
Promotion	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$12,000	0.0008
Fuel	$250	$250	$250	$250	$250	$250	$250	$250	$250	$800	$800	$800	$4,650	0.0003
Insurance	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$30,000	0.002
Maintenance						$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$49,000	0.0032
Payroll														
Sorters/ Fork Drivers				$24,563	$24,563	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$393,008	0.0259
Supervisor				$2,292	$2,292	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$36,665	0.0024
Shift Technicians				$3,648	$3,648	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$58,368	0.0038
Guards				$8,755	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$148,835	0.0098
Management	$11,599	$11,599	$11,599	$16,812	$16,812	$16,812	$16,812	$16,812	$16,812	$16,812	$16,812	$16,812	$186,105	0.0119
Employee Benefit	$2,320	$2,320	$2,320	$11,080	$12,839	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$163,459	0.0108
Training Reimbursement					($19,629)	($24,007)	($39,258)	($39,258)	($39,258)	$0	$0	$0	($161,410)	-0.0106
Debt Service														
Operating Capital		$0	$0	$0	$0	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$159,852	0.0105
Equipment		$2,243	$6,729	$13,457	$22,428	$22,428	$22,428	$22,428	$22,428	$22,428	$22,428	$22,428	$201,853	0.0133
Building		$1,187	$3,561	$7,123	$11,871	$11,871	$11,871	$11,871	$11,871	$11,871	$11,871	$11,871	$121,838	0.008
Chemical Supplies				$4,000	$8,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$124,000	0.0082
Utilities		$1,000	$1,000	$5,000	$10,000	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$164,805	0.0109
Total Operating Expenses	$19,609	$24,039	$30,899	$102,420	$116,024	$197,200	$181,949	$181,949	$181,949	$221,757	$221,757	$221,757	$1,687,250	0.1111
Net Profit (Loss) Before Taxes	($19,609)	($24,039)	($30,899)	($102,420)	($244,655)	($62,491)	$106,660	$106,660	$106,660	$66,852	$75,744	$84,636	$66,526	0.0044

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Plastic Recycling Year Two														
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Summary	$ per Lb.
Income														
Sales														
Natural HDPE Flake	$57,456	$41,040	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$467,856	0.12
Natural HDPE Pellet	$34,200	$68,400	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$872,100	0.25
Colored HDPE	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$984,960	0.12
Natural PET	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$2,807,136	0.38
Colored PET	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$1,149,120	0.28
Total Sales	$503,424	$521,208	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$6,281,172	0.232
Cost of Sales														
Natural HDPE (Bales)	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$574,560	0.07
Natural HDPE (Ground)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.09
Colored HDPE	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$164,160	0.02
Natural PET	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$574,560	0.07
Colored PET	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$205,200	0.05
Freight	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$861,840	0.03
Total Cost of Sales	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$2,380,320	0.088
Gross Profit From Sales	$305,064	$322,848	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$305,064	$3,878,622	0.143
Operating Expenses														
Administration	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$25,800	0.0011
Office Expense	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$25,800	0.001
Advertising	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$12,000	0.0005
Promotion	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$12,000	0.0004
Fuel	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	$9,600	0.0004
Insurance	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$30,000	0.0011
Maintenance	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$84,000	0.0031
Payroll														
Sorters/ Fork Drivers	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$589,512	0.0218
Supervisor	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$54,996	0.002
Shift Technicians	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$87,552	0.0032
Guards	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$210,120	0.0078
Management	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$194,184	0.0072
Employee Benefit	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$227,280	0.0084
Debt Service														
Operating Capital	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$274,032	0.0101
Equipment	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$267,756	0.0099
Building	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$89,688	0.0036
Chemical Supplies	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$192,000	0.0071
Utilities	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$253,380	0.0094
Total Operating Expenses	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$2,588,100	0.0955
Net Profit (Loss) Before Taxes	$89,389	$107,173	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$89,389	$1,290,522	0.0476

Plastic Recycling Year Three														
Income	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Summary	$ per Lb.
Sales														
Natural HDPE Flake	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$36,936	$443,232	0.12
Natural HDPE Pellet	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$76,950	$923,400	0.25
Colored HDPE	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$82,080	$984,960	0.12
Natural PET	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$233,928	$2,807,136	0.38
Colored PET	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$95,760	$1,149,120	0.28
Total Sales	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$525,654	$6,307,848	0.233
Cost of Sales														
Natural HDPE (Bales)	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$574,560	0.07
Natural HDPE (Ground)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0.09
Colored HDPE	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$13,680	$164,160	0.02
Natural PET	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$47,880	$574,560	0.07
Colored PET	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$17,100	$205,200	0.05
Freight	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$71,820	$861,840	0.03
Total Cost of Sales	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$198,360	$2,380,320	0.088
Gross Profit From Sales	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$327,294	$3,927,528	0.145
Operating Expenses														
Administration	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$25,800	0.0011
Office Expense	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$2,150	$25,800	0.001
Advertising	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$12,000	0.0005
Promotion	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$12,000	0.0004
Fuel	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	$9,600	0.0004
Insurance	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$30,000	0.0011
Maintenance	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$7,000	$84,000	0.0031
Payroll														
Sorters/ Fork Drivers	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$49,126	$589,512	0.0218
Supervisor	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$4,583	$54,996	0.002
Shift Technicians	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$7,296	$87,552	0.0032
Guards	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$17,510	$210,120	0.0078
Management	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$16,182	$194,184	0.0072
Employee Benefit	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$18,940	$227,280	0.0084
Debt Service														
Operating Capital	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$22,836	$274,032	0.0101
Equipment	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$22,313	$267,756	0.0099
Building	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$7,474	$89,688	0.0036
Chemical Supplies	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$16,000	$192,000	0.0071
Utilities	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$21,115	$253,380	0.0094
Total Operating Expenses	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$215,675	$2,588,100	0.0955
Net Profit (Loss) Before Taxes	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$111,619	$1,339,428	0.0495

US EPA ARCHIVE DOCUMENT

Brokers

Able Plastics
Barry Shemaria
4500 Ashburn Walk
Marietta, GA 30069
(404) 565-1522

Ace Trading Company
J.K. Kob
50-50 230th Street
Oakland Gardens, NY 11364
(718) 224-1666

Allied Deals, Inc.
Viren Rastogi
230-5th Avenue
New York, NY 10001
(212) 532-7644

Asian Export Material Supply Co.
John Wong
11 Suban Place
Newton, MA 02161
(617) 332-7929

Calbag Metals Company
Warren Rosenfeld
P.O. Box 10067
Portland, OR 97210
(503) 226-3441

Chemiplas
Howard Hackney
14950 Heathrow Forest Pkwy.
Houston, TX 77032
(713) 442-4728

Coren Mills
Herman Coren
P.O. Box 158
Gladwyne, PA 19035
(215) 525-4565

DLM American Plastics
Larry Markin
111 Pfingsten Road
Deerfield, IL 60015
(312) 776-0840

Acco Waste Paper
Chris Neal
314 Probandt Street
San Antonio, TX 78204
(210) 223-2618

Alaric Inc.
Peter C. Blythe
2110 N. 7th Street
Tampa, FL 33619
(813) 626-0458

Anderson Plastics, Inc.
Elmer Anderson
2211 6th Street
Miami, OK 74354
(918) 542-7614

Bridge Chemical Company
Scott Ho
2710 North Brompton
Pearland, TX 77581
(713) 436-1220

Capco
P.O. Box 4
Columbia, OH 44408
(216) 482-4686

Coast Polymers
Jerry Malcolm
9368 East Stewart/Gray Road
Downey, CA 90241
(310) 803-8781

D.S.P. Co., Inc.
Bud Arbo
P.O. Box 15
Leominster, MA 01453

Doyle Plastics
Tom Doyle
9720 Grandview
Overland Park, KS 66212
(913) 381-4229

Manufacturers

DuPont Canada Inc.
J.P. Crocker
201 South Blair Street
Whitby, ON LIN 5S6
(41) 430-5921

Embrace Systems Corp.
Bob Boryszewski
300 Pearl Street, Ste 200
Buffalo, NY 14202
(716) 842-6032

Federal Plastics Corp.
Peter N. Triano
715 South Avenue E.
Crawford, NJ 07016
(908) 272-5800

Free-Flow Packaging Corp.
James Jensen
1093 Charter Street
Redwood City, CA 94063
(415) 364-1145

Hancor Inc.
Sandy Simons
P.O. Box 1047
Findley, OH 45839
(419) 424-8272

Image Carpets Inc.
John Mathis
P.O. Box 5555
Armchee, GA 31305
(404) 235-8444

Iowa Plastics
Virg Houtkouper
322 North Main
Sioux City, IA 51250
(712) 722-0692

Jeanell Sales Corp.
Paul Spears
Sharon Industrial Parkway
Sharon, TN 38255
(901) 456-2681

Duratecch Industries
Al Cockrum
P.O. Box 536
Lake Odessa, MI 48849
(616) 374-0240

Envipco Composites
John Weiss
1600 Dolwick Drive
Erlanger, KY 41018
(606) 283-2150

Foam Molding Company of Arkansas
2503 Water Town Road
Rogers, AR 72756
(501) 636- 3540

Hammer's Plastic Corp.
Ted Yenglilng
P.O. Box 866
Woodstock, GA 30188
(404) 926-4118

Harmon Associates Corp.
William Schenger
86 Garden Street
Westbury, NY 11590
(516) 997-3400

International Plastics
Steve McClure
185 Commerce Center
Greenville, SC 29615
(803) 297-8000

J.M. McConkey & Co., Inc.
Don Knievel
P.O. Box 1690
Sumner, WA 98390
(206) 863-8111

JPS Elastometrics Corp.
David Lee
395 Pleasant Street
Northampton, MA 01060
(413) 586-8750

US EPA ARCHIVE DOCUMENT

GLASSTEKS, INC.

Sample Business Plan #2

Glassteks, Inc.

Location:	Sands, Oregon
Business Description:	Collection of waste glass for remanufacture into glass silica. New silica can be used as a substitute for sand in such applications as glass blasting, filler in non-skid mats, glass chips laid in concrete and pipe casting.
Founder:	William James LeDuc
Year Founded:	1994
Starting Capital:	Seeking $2,800,000 in debt financing. Founder is contributing $1,000,000 equity cash and collateral.
Sales 1st Year:	$1,180,000
Sales 3rd Year:	$6,348,800

Glassteks, Inc. is a unique market driven company formed to take advantage of an aggressive recycling effort in the state of Oregon. This document is designed to leverage commercial financing of $2,800,000 for the company to reach its full potential as the dominate processor of waste glass feedstock in the region.

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US EPA ARCHIVE DOCUMENT

RECYCLING GLASS FOR THE MANUFACTURE OF GLASS SILICA

Company Name: GLASSTEKS, INC.

Executive Summary

The State of Oregon made an early commitment to the collection of recyclable materials, long before markets for these materials were fully developed. Much progress has been made since the mid-1980s, and more markets for products made from some recovered recyclables, including glass are evolving. The recycling infrastructure is continuing to develop but some regions of the country, particularly rural regions, collecting recyclable feed stock and re-manufacturing for other purposes is still a virgin opportunity.

Drawing on materials from Northwestern Oregon, Glassteks plans to capture and recycle 960 tons of glass annually. Both glass containers and "waste glass" (defined as plate or window glass) will be collected for use in the business. The recyclable material will be manufactured into glass silica as a substitution for sand in such applications as glass blasting, filler in non-skid mats, glass chips laid in concrete, and pipe casting.

Description of Business

This glass recycling project will facilitate partnerships among county solid waste staff, university researchers, economic development professionals, entrepreneurs, and state purchasing agents. For rural communities, the high cost of transporting low-value recyclables long distances to secondary markets outside the region is a major expense and hinders the further development of recycling services. As a result, Northwest Oregon Recyclers Exchange (NOREX) has taken proactive steps to stimulate local recycling enterprises. NOREX has set as one of its primary goals to identify businesses in the region that could use recyclables collected in the region to manufacture recycled products. It is the responsibility of NOREX staff to work with potential recycling enterprises to match them with local resources as well as provide research assistance in an effort to develop a viable end market.

Most counties in Oregon have experienced the benefits of cooperative marketing and recognize the benefits that can result from extending that cooperation to include market development efforts. For its part, NOREX can guarantee a large and consistent supply of processed glass, a fundamental first step in developing a local market. Since the inception of NOREX's cooperative marketing program in 1991, the counties have jointly marketed 1,400 tones of recyclables and eight different materials, resulting in a combined increase in the sale of recyclables by over 10 percent. In addition, NOREX recently agreed to fund the marketing effort, in part by a 10 percent fee on materials marketed, taking the lead on a national level to make the venture self-sustaining. NOREX is also working to expand its membership to include neighboring recyclers in northeast Oregon, southeast Oregon, and northeast Washington State.

Below is a list of the overall recycling rates for each of the nine regional counties according to the 1992 SCORE Report:

County	Overall Recycling Rate
County #1	31%
County #2	20%
County #3	29%
County #4	29%
County #5	34%
County #6	30%
County #7	51%
County #8	26%
County #9	27%

As a private recycler, Glassteks is acutely aware of the difficulty in marketing the mounting supplies of green glass and in trying to follow stringent market specifications set by the beverage industry which require 0% contamination of ceramic glass. While labor costs for color-separating glass remain high, market prices for green and brown continue to drop, making it a greater challenge to recoup the costs of recycling the glass. This has led Glassteks to develop non-traditional approaches to develop local markets for glass that involve strategic partnerships with the county, state, and local university to help in two areas in particular.

Conducting Research

The Composite Materials Technology Center (COMTEC) at Salem State University has committed to conduct research and supportive services for products that Glassteks manufactures. Critical path testing will be done to ensure that essential product information and specifications are obtained. Testing may include determining mechanical properties, physical properties, thermal analysis, microscopy, long term stability, rheological properties, design and analysis, and prototype manufacturing. It is intended that the test results from the products manufactured by Glassteks be compared to similar products currently on the market.

Marketing Products

There currently exists a general perception that products generated from recyclable materials are inadequate to virgin materials. To break down some of these prejudicial barriers and assist in "closing the recycling loop," the State of Oregon Materials Management Division for Contracts and Technical Services, will assist Glassteks in establishing contracts utilized by state agencies and political subdivisions. Relying on the product test results, this division has the authority to make code changes to allow state agencies to use recyclable products in place of virgin materials. Once the State of Oregon integrates recyclable products into their regular purchasing program, it becomes easier for local government to purchase these products. Furthermore, state contracts can help spur private businesses to procure more non-traditional types of recycled products.

This project will concentrate on capturing two streams of glass: 1) clean food and beverage containers currently going to glass container manufacturers; and 2) waste glass unrecovered in the stream of recyclables. Both streams of glass will be used to manufacture glass silica. The key to this process is the production of material that is comparable to silica sand for a variety of applications. If there are a variety of applications, then the economic potential is increased, and the overall demand more stable.

In addition, the findings of this project will be compiled by University and public sector partners in a manual and disseminated to lenders as well as local economic development staff to increase awareness of and involvement in manufacturing processes involving recyclable materials. It is particularly important to reach out to lenders, as they are usually unfamiliar with the technologies involved in making a product from recyclables and view the business as a risky investment.

Over the course of the past several months, a variety of potential applications for glass have been researched. Among those researched were glass block and glass aggregate used in underdrain. Glassteks and NOREX have remained determined to identify and secure a suitable market for the region's glass.

Over the course of the past several months, a variety of potential applications have been researched. Among those researched were glass block and glass aggregate used in underdrain. Glassteks and NOREX initially explored glass block as a potential market, but found that while it was a value-added product, the value here is in the process of making the blocks, not in the cost of the glass itself. Concerning the underdrain product, existing building codes and insufficient product testing posed road blocks.

Based on the obstacles that have been encountered thus far, the future challenges will be to try and overcome the perception that products manufactured from recyclables are unsuitable for use, and to ultimately secure a long-term market for the region's glass. Other challenges will be to gather support from the community at large to purchase products made from recyclable materials, and to establish cooperative relationships with waste haulers and glass companies to capture more of the waste glass that would otherwise end up in the landfill. Project will consist of gathering data pertaining to collection, processing, manufacturing, and distribution of final products.

- **Collection**—Compile data concerning the methods used to collect material and quantity of materials marketed, including tonnage received and locations from which the glass originated.

- **Processing**—Report on method of processing material and all changes made to increase performance/output.

- **Testing**—Utilize test results to decide the course of new or continued testing, known as critical path analysis.

- **Marketing**—Analyze the viability of developing this local market—describe the successes and shortcomings.

Market specifications for glass containers:

Ideally, citizens should color-sort glass at the curb--that's the easiest and best place to separate glass by color and remove contaminants. Community recycling programs that allow for mixed glass pickup may, in reality, be trading convenience for marketability.

Even if color separation doesn't happen at the curb, colors and contaminants should be sorted out early in the process. Once the cullet gets broken or mixed, contaminants are difficult to remove and can spoil the quality of an entire load.

New technologies for sorting by color are being researched. But for now, cullet must be color-sorted by hand. For suppliers, increased revenue potential often makes it worth the extra effort.

In comparison, mixed cullet has significantly lower demand and revenue potential. Glass manufacturers have limits on the amount of mixed cullet they can use for manufacturing new containers — and, generally, they prefer not to buy it. Other markets for mixed glass are growing. But currently, they are limited.

Common materials that contaminate cullet

- ceramic cups, plates and pottery
- clay garden pots
- laboratory glass
- crystal and opaque drinking glasses
- mirrors
- windshields and window glasses
- heat-resistant ovenware (for example, Pyrex or Visionware)
- light bulbs

Other contaminants include:

- ceramic and wire caps for beer bottles
- lead collars from wine and champagne bottles
- stones and dirt
- metal caps, lids and neck rings
- drinking glasses
- hazardous glass containers (for example, acid containers)

Market specifications for waste glass:

All clean plate or window glass. Up to 5 percent contamination allowable for miscellaneous debris. Specifications may be refined after silica samples have been tested and evaluated.

All glass must be received in gaylord containers or drums.

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The impacts of this project are far-ranging and include new sources of profits, job creation, and an improved environment. Also important will be the development of new cooperative relationships with educational institutions, private businesses, and the state. In addition, the findings of the project can serve as a state model, providing tangible results to stimulate further research and development of new glass markets. Finally, this project will ensure the continuation of recycling and keep recyclables out of the waste stream, and in so doing, develop usable products for consumers.

The Market

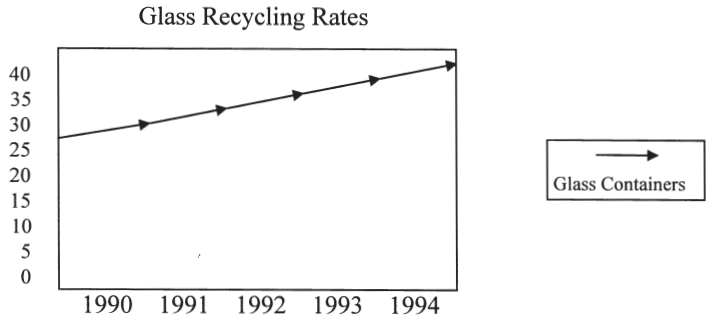
Glass containers are a valuable feedstock for the glass manufacturing process. Cullet, or crushed glass, reduces the amount of energy required to melt glass and extends the life of very capital intensive furnaces. Skeptics may say that package manufacturers are motivated to recycle only by the reality or threat of command-and-control legislation, such as forced deposits, minimum recycling content, or advance disposal fees. But Oregon glass manufacturers have long endorsed recycling as environmental stewardship—the right thing to do. The industry recycled and promoted recycling before recycling was "in."

Prior to World War II, glass containers had 100 percent of the "packaged" market for beer, carbonated soft drinks, milk, spirits, and wine. Many foods were packed in jars or bottles. Soft drinks, beer and milk required no recycling infrastructure, since they were 100 percent packed in returnable, refillable bottles that were returned through the direct-to-store or home delivery system for refilling or recycled at the glass factory.

Glass production has always been a little like baking sourdough bread, i.e., you need a little glass to make glass. Since any "offware" from the production process is 100 percent recycled into new glass containers, plants have a long history of handling cullet. Adoption of batch systems was an easy transition as the industry successfully solicited post-consumer cullet due to the growing interest in consumer based recycling.

During and after World War II, the glass industry's dominance in returnable, refillable packaging suffered share erosion as new "non-refillable" packaging of metal cans, plastic- coated paper and plastic entered the market. Unencumbered by geographical boundaries imposed by the returnables, these packages promoted centralized filling locations and other economies of scale.

In response to these challenges, the glass industry created single-trip, single-serve lightweight glass containers, especially for the beer and soft drink markets. The industry recognized early on the need to develop systems to ensure that "all glass containers are returnable—some for refilling and others for recycling."



Today, glass containers are returned for recycling through four channels: buy-back centers, drop-off centers, curb-side collection, and Material Recycling Facilities (MRFs). The most dominant, curb-side collection and MRFs, not only maximize recovery of materials on a large scale but also have the greatest impact on total system costs and quality of material collected.

Since glass containers are produced from some of the earth's most abundant resources—silica sand (71-73 percent), soda ash (10-13 percent), and limestone (10-13 percent), post consumer recycled glass must compete in terms of price and quality with these virgin materials. This challenges recycling ingenuity. Unlike

virgin materials that are "mined" from the earth, cullet is "mined" from municipal solid waste. This "unprocessed cullet" is delivered to a processing or beneficiation facility where it is brought to virgin material standards before delivery to the glass plant.

Many curbside programs have abandoned source separation or recyclables, i.e., aluminum, PET, HDPE, and three colors of glass, in favor of commingled collection. Thus, large quantities of glass fail to meet criteria of being color sorted and contaminant free. Some commingled collection programs, with multiple handling stages and transfer stations, can generate as much as 50 to 70 percent unusable mixed-color cullet, compared to less than three percent with source separation systems.

The industry produces soda-lime containers for the food and beverage industries with small amounts for other end uses. The dominant color is clear (63 percent), followed by brown (28 percent), green (eight percent), and all other colors (one percent). The food industry is the largest end-use for baby food, sauces, pickles, fruit juices, which is almost totally clear glass. Glass consumed in the home represents the greatest source of post-consumer cullet. The challenge is to establish convenient public or private collection systems and combine them with on-going consumer education programs.

The glass industry possesses the technical capability to recycle all glass containers that it can reasonably expect to obtain from public or private collection programs. This material must be color-sorted and contaminant-free. Soda-lime glass containers for the food and beverage industries can be recycled, but trash cannot be recycled.

This section of the business plan presents the strategies Glassteks is applying in obtaining feedstock and selling the finished good.

Feedstock Supplier Overview

A steady supply of quality feedstock is an important component of the company's success. While the acquisition of large quantities of commingled post-consumer glass is relatively easy, management's prior experience has shown that shipments from suppliers that contain a high level of unmarketable material, contamination and trash can be detrimental to operations. Therefore, the company must be selective in the feedstock it acquires. Suppliers must be targeted who not only can provide large quantities of feedstock on a regular basis to enable the company to achieve its production goals, but it is equally important that the material be free of contaminants which could hinder production and ultimately have an adverse affect on the quality of finished goods.

According to records of NOREX staff, 3,158.52 tons of food and beverage glass containers were collected and marketed in 1995. Of that, approximately 25 percent of the glass consisted of green and brown colored glass. The project will require 960 tons of glass, which is roughly 30 percent of the glass generated in the NOREX region. Ideally, the NOREX counties could market brown and green glass (mixed or color-separated) to Glassteks and continue to market their clear glass to the beverage container industry. A portion of the 960 ton supply of glass will include waste glass as well. This will be collected with the cooperation of the local glass businesses and waste haulers.

Although feedstock is relatively easy to obtain, an initial sales effort is required to establish a long-term relationship with large-volume suppliers. Once the relationship is established, suppliers require only minimal contact.

Each production facility would ultimately manage the shipping and receiving activities of over 150 trucks per month. To facilitate the efficient coordination of feedstock receipts, suppliers would be issued a "Receiving Authorization" number prior to shipment denoting the day and time the shipment would be scheduled. Receiving authorization numbers also provide information about quality, type of material, and recurrence of shipments. This system allows the company to utilize an informal just-in-time inventory system to minimize warehouse space and optimize the material flow through the warehouse.

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To reduce the effort required in obtaining feedstock for production, the company's objective would be to establish business relationships with five suppliers or less that could provide 85 percent of the monthly feedstock. The remaining 15 percent would be obtained from "walk-in" suppliers. The important components involved in establishing a strong business relationship with suppliers include:

Regular, timely payments for feedstock. Suppliers must feel secure that they will be paid for their material Ability to pay is often more of a factor than price since most suppliers have already been paid for collecting their material and only want to offset their freight costs to dispose of the material. Typical industry terms for payment of feedstock is 45 to 60 days. As an added incentive, the company may consider paying in 15 days for material received from suppliers (financial projections assume 45 days average).

Ability to accept material on a regular basis. A primary motivation of most collectors is to 'get rid of' their material as soon as possible once a shipment is ready. Delays from markets cause collectors to incur a warehouse expense forcing them to locate alternative outlets to alleviate their inventories. The company would establish regular shipping schedules with its primary suppliers. In some cases, large suppliers with the ability to ship on a regular basis would be issued Receiving Authorization numbers for a month in advance. This is mutually beneficial because the supplier has a regular shipping schedule established in advance while the company is able to schedule its production based upon anticipated shipments.

Long-term, professional relationship. Some of the companies who comprise the company's group of primary suppliers are Fortune 500 companies. In the past, these companies have responded extremely well to the professional leadership exhibited by the company's management team. The result has been mutually beneficial business partnerships. These suppliers typically seek long-term relationships with markets to reduce their marketing efforts.

Quality Control. Glassteks will only conduct business with suppliers that can maintain a high degree of quality control. Vendors will be evaluated against the following criteria:

- Contact potential buyers to get their specifications and acceptance policies, ability to remove contaminants, transport preference (truckload or rail car) and "furnace ready" requirements.
- Ask about buyers' capacity to remove metals.
- Conduct inspections—before adding newly-collected glass to stored recyclables during loading for shipment.
- Glass containers break sufficiently with handling to allow for economic transport. Crushing the cullet will not add to its value.
- If stored outdoors, cullet should be placed on a concrete pad—not on the ground or asphalt—to avoid contamination from dirt orf gravel during loading. Cover cullet during cold or wet weather.
- When storing multiple loads of colored cullet, keep the cullet separated so no intermingling of colors can occur.
- Prior to loading cullet shipments, wash the truck bed. Inspect the truck bed and the tarp used to cover the load for any reside from a previous hall.

Materials accepted. Collectors prefer to commingle their material because it is the fastest and most cost-effective method of processing. Since the types of recyclable material accepted are usually dictated by local mandates, collectors would find it advantageous to sell to markets that could accept a wide variety of glass types. The number of glass types accepted by the company would be more than any other market known.

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Feedstock Pricing

The company would hold a significant advantage as an outlet for commingled post-consumer glass bottles and, therefore, would be able to acquire its raw materials at a very advantageous price because most of the suppliers with whom the company would be dealing obtain their revenues for processing up front by charging a tipping fee or other method of pricing to cover their processing and overhead costs. They are usually willing to accept a price that minimizes or eliminates their cost of shipping the material to market. The primary motivation for them is to simply 'get rid of' the material without incurring additional costs.

Few outlets for *commingled* post-consumer glass exist. Therefore, many suppliers would tend to accept the prices offered by the company.

Once a supplier is located or contacts the company, the following criteria are used to establish a price for material acquired from that supplier:

- quality of material.
- supplier's estimated shipping cost.
- available monthly supply.
- mix of material.

To establish itself with new suppliers, the company would purchase a few test shipments at a lesser price. The purchase price could be adjusted based upon how the material compares to the criteria listed above. In some cases, shipments containing unmarketable bottles or other contaminants in excess of 10 percent would either be subjected to the company's shipment rejection policy or charged a tipping fee.

The Competition

It has been difficult to gain knowledge in the area of non-traditional glass markets as many of the key players are reluctant to share ideas, fearing it will create competition for their business. Vendors, recycling businesses, and universities alike have held much of their information as proprietary. Even in cases where Glassteks was negotiating to franchise with a company manufacturing an underdrain product, pertinent information was slow in surfacing or simply not provided. Despite this barrier, Glassteks and NOREX have remained determined to identify and secure a suitable market for the region's glass.

Market Share

Because of the lack of available data it is not possible to determine the potential market share of glass silica material expected to be captured and retained by the company. The company is currently unaware of any companies in the region manufacturing waste glass into glass silica.

Following is a description of the applications for glass silica and the steps taken to secure markets for these applications.

Glassblasting

As a blasting material, cullet competes with sand, plastics, and metals, such as steel shot (steel particles). Discussions are ongoing with Kelly Industries, who currently uses chilled iron/steel grit for sandblasting. The particle size ranges from 50-80 grit and costs $460/ton. Kelly is interested in testing the product, believing that the glass may be a "friendlier" abrasive resulting in less warping of the objects being blasted.They have a system in place for collecting and recycling some of the material. They use a "bag house," or dust collector, to separate the heavy dust from the light dust for reuse.

Representatives from the State Department of Transportation stated that they also use steel grit in blasting operations. They stated that there agency would need to conduct tests on the samples before experimenting with the product on a specific project.

Pipe Casting

Discussions with local foundries have led Glassteks to examine the use of glass silica in casting molds used to shape metal alloys. The process involves packing molding sand around the casting pattern and then placing a core within the cast. The mold is then ready to be shaped. Preliminary research has revealed that glass begins to soften and bend at 1,000-1,500 degrees F, whereas alloy metals are generally molded at higher temperatures. However, Glassteks is continuing to investigate if a blend of glass and sand could be used in the process. Research is also being conducted to determine if there are other types of molding companies that might be able to use glass as a substitute in their casting process.

Glass Used as an Aggregate in Concrete

Glassteks is investigating the potential to use glass in garden pavers, patio bricks, decorative blocks, and similar landscaping applications. The process would involve mixing fine glass (as a substitute for sand) with Portland cement to create a base layer, and to then add coarse glass to give it color and an aggregate look. Glassteks has approached the State Department of Transportation about experimenting with glass on sidewalks and paths at their rest areas. The DOT has considered moving away from aggregate laid in concrete because in the rainy season, the aggregate can make for slippery footing posing safety concerns (In higher elevations, ice freezes up in the grooves of the walk. However, the glass aggregate product is believed to be able to refract rays from the sun, thereby melting any ice and snow). Glassteks is negotiating with a major commercial builder in the region about experimenting with glass aggregate. A letter of commitment is expected shortly.

Filler in Grit Surfaces

In industrial flooring, there are a wide range of epoxy resin floorings designed for safety, aesthetics, and sanitary surfaces. Industry uses grit to build body and create non-skid surfaces. Glassteks and NOREX plan to work with Sid Neibor of ORDOT, who may be willing to test the product in a specific building construction project location.

Glasstek's address is 4250 East 20th Street, Sands, OR. It is located on the outskirts of Salem, Oregon, and situated midway between urban and rural areas. It has the advantage of being located near three major arteries and is easily accessible from many locations. As Glassteks currently accepts and processes recyclables at this facility, and is in compliance with all zoning ordinances, no additional ordinances would need to be addressed to implement this project.

Discussions are currently underway with several vendors to purchase the glass crushing equipment necessary for the project. One of the companies Glassteks originally intended to purchase equipment from has since decided not to sell their equipment. The vendor has elected to keep their equipment and technology proprietary to be used in their own beneficiation plant being planned for construction. If Glassteks determines the equipment available on the market is unsatisfactory, it will cooperate with local engineers to develop a glass crusher to meet their needs. The following is a list of criteria for selecting a glass crusher.

- Equipment costs.
- Safety Equipment, such as guards to protect workers from flying glass, rotating shafts, belts, pulleys, and other moving parts.
- Screening system to control particle size and debris level.
- Mechanism for controlling the speed at which the glass is crushed.
- Abrasion-resistant surfaces to protect against "wear and tear" on the machine.
- Conveyor belts to feed glass in and out of crusher.
- Crushing device that produces rounded and smooth-edged silica particles.
- Equipment powered by motors varying in size from 5 horse power to 25 horse power.
- Dimension specifications not to exceed 10 X 14.

Winona County has issued two permits to Glassteks for operation of its recycling facility. Glassteks currently holds a Solid Waste Collection and Transportation Permit, as well as an Intermediate Solid Waste Disposal Facility Permit. No additional permits will be required to implement this new project.

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Glassteks and NOREX have investigated the potential hazard that glass dust may pose to employees, and has found no clear evidence that glass dust produced during the manufacturing process is hazardous. However, Glassteks intends to send silica samples to the Oregon Department of Labor and Industry, Department of Air Sampling Analysis, to be certain that any glass dust being produced is within acceptable levels. In addition, necessary protective clothing and gear will be worn by all employees to ensure their safety.

To further address the issue of air quality, the following passage was taken from the Clean Washington Center's report entitled, *"Glass Feedstock Evaluation Project: Evaluation of Cullet as a Construction Aggregate, Final Report," p. 4.*

"Air samples for silica tests were taken during the engineering test program of the glass cullet to assess the potential airborne risks from crystalline silica, which is a known carcinogen. Test results on these samples indicated crystalline silica concentrations of less than one percent, which is not considered hazardous by federal regulations. Therefore, cullet appears to have none of the health risks associated with silica sand.

Cullet is an abrasive material. Laboratory personnel experienced some skin irritation where very fine cullet fragments abraded the skin at shirt cuffs or collars. This irritation was prevented through the use of protective clothing which minimized bodily contact with cullet. Safety clothing normally used when working with natural aggregate should be worn when working with cullet."

Pricing

The company has calculated a price of 16 cents per pound for manufactured product. This price is considerably below market rate for silica manufactured from virgin materials and pricing meets the company's goals for profitability.

Promotion

Glassteks will work cooperatively with NOREX to research and approach prospective customers. Tapping into various resources, such as Oregon Technology, Glassteks plans to obtain additional assistance in marketing their product. Furthermore, Glassteks will utilize their metro sales representative to assist in identifying and contacting potential customers in the cities of Salem and Portland. Product specifications will be made available after Salem State University completes their research. After potential customers have experimented with the product, negotiations will begin to secure contracts for long-term purchase of the product. In an effort to further increase their exposure to potential customers, Glassteks will also participate in appropriate trade shows.

Form of Ownership

Glassteks, Inc. is a U.S. corporation formed in the State of Oregon.

Management/Personnel

The company has assembled an impressive management team that has amassed all necessary experience in engineering and environmental issues, plus sales and marketing, to make a success of this project.

William DeLuc, the President and Chief Engineer of the company has over 20 years' experience in the recycling industry, has degrees in management and psychology, and has taken a number of courses in materials engineering (See attached resume).

Ann Boland, the Vice President and Director of Human Rsources has strong personnel management skills, as well as a degree in chemistry, and an advanced degree in psychology (See attached resume).

It becomes obvious having the right employees to identify acceptable condition of goods, fair market price of goods and their ultimate resale value is essential. In addition to President and Vice President, Glassteks will assemble a dedicated team of employees who will be charged with the following responsibilities:

One full-time Operations Manager

Responsibilities:	Inventory Control Building Maintenance Staff Scheduling Shipping Health and Safety Inspections
Reports to:	President and Chief Financial Officer

One full-time Financial Manager

Responsibilities:	Material Pricing Vendor Payments and Receipts General Accounting Contract Development Bidding and Estimating Operating Budgets Payroll and Tax Remittance
Reports to:	Vice President and Director of Human Resources

One full-time Engineer

Responsibilities:	Equipment Purchases and Set-up Shop Layout and Work Flow Process Controls Quality Control Storage, Sorting and Cleaning of Materials HVAC and Other Utility Maintenance
Reports to:	Operations Manager

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FINANCIAL FORECASTS

Financial Data

The purpose of this proposal is to secure $3,800,000 in funding to develop and establish a facility to recycle glass feedstock to manufacture glass silica.

Funding will be in the form of $1,000,000 in equity funding and $2,800,000 in debt financing and will be utilized as follows:

Engineering studies, etc.	$20,000
Deposits, etc.	30,000
Insurance	20,000
Legal	20,000
Subtotal	$90,000
Office equipment	$35,000
Initial advertising	30,000
Subtotal	$65,000
Total start-up capital	$3,295,000
Working capital reserve	$505,000

Production Schedules

Production schedules have been estimated to generate the following revenue.

Period	Hours	Lbs. Per Hour	Total Pounds	$ per Pound	Total Revenue
1st quarter	100	4,000	400,000	.16	$64,000
2nd quarter	190	4,000	760,000	.16	121,600
3rd quarter	320	4,000	1,280,000	.16	204,800
4th quarter	320	6,000	1,920,000	.16	307,200
		total annual revenue - year 1			**$1,795,200**
5th quarter	320	6,000	1,920,000	.16	$307,200
6th quarter	320	8,000	2,560,000	.16	409,600
7th quarter	320	8,000	2,560,000	.16	409,600
8th quarter	320	10,000	3,200,000	.16	512,000
		total annual revenue - year 2			**$4,710,400**
9th quarter	320	10,000	3,200,000	.16	$512,000
10th quarter	320	10,000	3,200,000	.16	512,000
11th quarter	320	12,000	3,840,000	.16	614,400
12th quarter	320	12,000	3,840,000	.16	614,400
		total annual revenue - year 3			**$6,656,000**

Salaries and Benefits

Annual salaries are projected for the following company personnel (year one only), moderate pay increases applied in years 2 and 3.

SHOP PERSONNEL	
Staff #1 ($6/hour)	$12,480
Staff #2 ($6/hour)	12,480
Staff #3 ($8/hour)	16,640
Staff #4 ($8/hour)	16,640
Staff #5 ($8/hour)	16,640
Total Shop	$74,880
SHOP BENEFITS	$6,840
MANAGEMENT	
President	$45,000
Vice President	40,000
Operations Manager	40,000
Financial Manager	25,000
Engineer	16,000
Total Management	$166,000
MANAGEMENT BENEFITS	$27,240

Other Significant Assumptions

1. Loans

A) Initial debt service of $2,800,000 is financed over a five year term at 8.5% annual percentage rate.

B) An additional $1,500,00 is financed in month eight of year one, for the addition of three production lines; same terms of above. Equipment anticipated for purchase include:

Equipment (crushers)	$1,300,000
Installation	50,000
Dust collectors	10,000
Lease hold improvements	35,000
Subtotal	$1,395,000
Equipment shipping	$45,000
Conveyor systems	60,000
Subtotal	$105,000

C) An additional $600,000 is financed in month four of year two, as partial financing for two additional production lines. Equipment anticipated for purchase include:

Equipment (crushers)	$520,000
Installation	20,000
Dust collectors	4,000
Lease hold improvements	14,000
Subtotal	$55,000
Equipment shipping	$18,000
Conveyor systems	24,000
Subtotal	$42,000

2. Corporate income tax liability is calculated at 35% of net profit before tax.

3. Gross wages constitute salaries & wages for management and production salaries (see salary schedule).

4. Payroll expense includes employee portion of Social Security contributions for all employees - management and production. Also included is Unemployment Benefit Insurance.

5. Fringe benefits are calculated at $454.00 per month for all management personnel which constitutes payments for PHP Family Plan Health Insurance benefits.

6. First year operating expenses include startup costs for advertising, accounting and legal, utilities, insurance and engineering and licensing fees.

7. Insurance premiums cover buildings, vehicles, general liability and workers compensation. Liability coverage is

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Ann K. Boland

EDUCATION

Southern Illinois University, Carbondale, IL
Master's in Business Administration, December 1983

University of Wisconsin, Eau Claire, Eau Claire, WI
Bachelor of Arts in Psychology with a minor in Chemistry, 1980

State of Minnesota
Licensed Social Worker

EXPERIENCE

GLASSTEKS, INC., 1991-PRESENT

Vice President for Development responsible for management of the recycling, training programs, employment department direction, and community outreach. Directs fund raising events, grant writing, marketing material, public relations, and the company safety program.

GLASSTEKS, INC., 1980-1991

Employment Manager responsible for hiring and expanding employment programs, orientation programs, scheduling, supervising, and evaluating staff. Develop and implement program evaluation, inform all staff on Department of Labor regulations. Develop employment sites, drafting bids and contracts. Responsible for educating the public on recycling priorities. Case management for consumers of the program.

RECYCLE INDUSTRIES, 1987-1991

Job Placement Specialist teaching job readiness training and job seeking skills classes. Established employer contacts and record maintenance.

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PROFESSIONAL EXPERIENCE

GLASSTEKS, INC., 1983-PRESENT

President, responsible for overall management and operation of the corporation under the direction of the Board of Directors. Directs professional staff, business operations, program development, and fund raising. In July of 1983, Glassteks, Inc., was separated from Recycle Industries of Portland, Oregon. The corporation has shown a net gain in every fiscal year since that time, while more than doubling in size, both in annual budget and number of consumers served. Glassteks is an accredited recycling company with eight core programs, and is considered a leader in developing innovative and cost-effective recycling programs suited to the needs and priorities of the Pacific Northwest

RECYCLE INDUSTRIES, INC., 1977-1983.

General Manager responsible for the management of staff and administration of programs, client services and plant operations. Reported to the President of Recycle Industries in Seattle, Washington. Major achievements during this period include expansion of staff from six to twelve, first professional accreditation of facility, 50% increase in client load, and 32% increase in business income. A corporate and foundation fundraising effort resulted in the construction of a new $345,000 facility.

RECYCLE INDUSTRIES, INC., 1976-1977

Placement counselor responsible for placing clients into competitive employment and providing follow-up counseling, teaching job skills and job awareness classes, establishing employer contacts and maintaining records of these contacts, public relations, and related duties.

ABILITY BUILDING CENTER, (FARGO, ND), 1970-1975

Coordinator of Vocational Evaluation responsible for writing vocational evaluation reports, intake procedures for consumers entering programs, supervision of aptitude and interest testing, work evaluation in shop settings, vocational counseling, hiring overload production workers, and related management duties.

EDUCATION

University of Oregon; Masters in Business Administration, 1967. Emphasis on Management and Management Information Systems.

North Dakota State University, Fargo,North Dakota, Bachelors Degree in Psychology, 1965.

Have also completed 12 graduate credits in Materials Technology at Salem State University.

GLASSTEKS INC.

STATEMENTS OF CASH FLOWS - YEAR 1	START UP	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12	TOTAL YEAR 1
BEGINNING BALANCE	$ 1,000,000	$ 505,000	$ 404,809	$ 304,618	$ 241,382	$ 189,962	$ 150,021	$ 120,636	$ 119,731	$ 136,255	$ 124,960	$ 152,080	$ 218,029	$ 1,000,000
CASH FLOW FROM OPERATIONS														
Cash Sales	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Credit Accounts	$ -	$ -	$ -	$ 38,400	$ 57,600	$ 64,000	$ 76,000	$ 112,000	$ 121,600	$ 128,000	$ 172,800	$ 204,800	$ 204,800	$ 1,180,000
Loans	$ 2,800,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,500,000	$ -	$ -	$ -	$ -	$ 4,300,000
TOTAL CASH RECEIPTS	$ 2,800,000	$ -	$ -	$ 38,400	$ 57,600	$ 64,000	$ 76,000	$ 112,000	$ 1,621,600	$ 128,000	$ 172,800	$ 204,800	$ 204,800	$ 5,480,000
TOTAL CASH AVAILABLE	$ 3,800,000	$ 505,000	$ 404,809	$ 343,018	$ 298,982	$ 253,962	$ 226,021	$ 232,636	$ 1,741,331	$ 264,255	$ 297,760	$ 356,880	$ 422,829	
CASH PAID OUT														
Purchases	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Gross Wages	$ -	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 240,880
Payroll Benefits	$ -	$ -	$ -	$ -	$ 7,829	$ -	$ -	$ 7,829	$ -	$ -	$ 7,829	$ -	$ -	$ 23,487
Fringe Benefits	$ -	$ 2,270	$ 2,270	$ 2,270	$ 2,270	$ 2,270	$ 2,270	$ 3,405	$ 3,405	$ 3,405	$ 3,405	$ 3,405	$ 3,405	$ 34,050
Supplies	$ -	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 3,600
Repairs & Maintence	$ -	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 45,000
Advertising	$ 30,000.00	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 60,000
Car & Travel	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Accounting & Legal	$ 20,000.00	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 38,000
Lease	$ -	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 129,996
Telephone	$ -	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 6,000
Utilities	$ 30,000.00	$ 3,000	$ 3,000	$ 3,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 5,000	$ 5,000	$ 77,000
Insurance	$ 20,000.00	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 32,000
Interest	$ -	$ 19,833	$ 19,567	$ 19,299	$ 19,028	$ 18,756	$ 18,482	$ 18,206	$ 17,928	$ 28,273	$ 27,849	$ 27,421	$ 26,990	$ 261,632
Engineering	$ 20,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000
Subtotal	$ 120,000.00	$ 62,578	$ 62,312	$ 63,488	$ 70,602	$ 65,251	$ 66,421	$ 73,665	$ 65,558	$ 79,347	$ 85,308	$ 78,051	$ 79,064	$ 851,645
Loan Principle	$ -	$ 37,613	$ 37,879	$ 38,148	$ 38,418	$ 38,690	$ 38,964	$ 39,240	$ 39,518	$ 59,948	$ 60,372	$ 60,800	$ 61,231	$ 550,821
Capital Purchase	$ 3,175,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,500,000	$ -	$ -	$ -	$ -	$ 4,675,000
Deposits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reserves	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Corp Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CASH PAID OUT	$ 3,295,000	$ 100,191	$ 100,191	$ 101,636	$ 109,020	$ 103,941	$ 105,385	$ 112,905	$ 1,605,076	$ 139,295	$ 145,680	$ 138,851	$ 140,295	$ 6,197,466
ENDING CASH BALANCE	$ 505,000	$ 404,809	$ 304,618	$ 241,382	$ 189,962	$ 150,021	$ 120,636	$ 119,731	$ 136,255	$ 124,960	$ 152,080	$ 218,029	$ 282,534	$ 2,950,017

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US EPA ARCHIVE DOCUMENT

GLASSTEKS INC.

STATEMENTS OF CASH FLOWS - YEAR 2	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12	TOTAL YEAR 2
BEGINNING BALANCE	$ 282,534	$ 449,804	$ 624,903	$ 798,558	$ 224,544	$ 383,583	$ 643,577	$ 896,506	$ 1,157,264	$ 1,414,578	$ 1,665,507	$ 1,923,265	$ 283,534
CASH FLOW FROM OPERATIONS													
Cash Sales	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Credit Accounts	$ 307,200	$ 307,200	$ 307,200	$ 307,200	$ 307,200	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 4,403,200
Loans	$ -	$ -	$ -	$ 600,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 600,000
TOTAL CASH RECEIPTS	$ 307,200	$ 307,200	$ 307,200	$ 907,200	$ 307,200	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 409,600	$ 5,003,200
TOTAL CASH AVAILABLE	$ 589,734	$ 757,004	$ 932,103	$ 1,705,758	$ 531,744	$ 793,183	$ 1,053,177	$ 1,306,106	$ 1,566,864	$ 1,824,178	$ 2,075,107	$ 2,332,865	$ 5,285,734
CASH PAID OUT													
Purchases	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Gross Wages	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 240,880
Payroll Benefits	$ 7,829	$ -	$ -	$ 7,829	$ -	$ -	$ 7,829	$ -	$ -	$ 7,829	$ -	$ -	$ 31,316
Fringe Benefits	$ 3,405	$ 3,405	$ 3,405	$ 3,405	$ 3,405	$ 3,405	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 44,946
Supplies	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 3,600
Repairs & Maintence	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 45,000
Advertising	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 30,000
Car & Travel	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Accounting & Legal	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 18,000
Lease	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 129,996
Telephone	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 6,000
Utilities	$ 3,000	$ 3,000	$ 3,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 5,000	$ 5,000	$ 47,000
Insurance	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 12,000
Interest	$ 26,557	$ 26,120	$ 25,680	$ 29,487	$ 28,984	$ 28,477	$ 27,967	$ 27,453	$ 26,935	$ 26,414	$ 25,889	$ 25,360	$ 325,323
Engineering	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal	$ 78,266	$ 70,000	$ 71,004	$ 82,196	$ 76,614	$ 77,551	$ 84,107	$ 75,764	$ 78,690	$ 84,554	$ 77,200	$ 78,115	$ 934,061
Loan Principle	$ 61,664	$ 62,101	$ 62,541	$ 71,044	$ 71,547	$ 72,055	$ 72,564	$ 73,078	$ 73,596	$ 74,117	$ 74,642	$ 75,171	$ 844,120
Capital Purchase	$ -	$ -	$ -	$ 1,300,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,300,000	$ 2,600,000
Deposits	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reserves	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Corp Tax	$ -	$ -	$ -	$ 27,974	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 27,974
CASH PAID OUT	$ 139,930	$ 132,101	$ 133,545	$ 1,481,214	$ 148,161	$ 149,606	$ 156,671	$ 148,842	$ 152,286	$ 158,671	$ 151,842	$ 1,453,286	$ 4,406,155
ENDING CASH BALANCE	$ 449,804	$ 624,903	$ 798,558	$ 224,544	$ 383,583	$ 643,577	$ 896,506	$ 1,157,264	$ 1,414,578	$ 1,665,507	$ 1,923,265	$ 879,579	$ 879,579

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Sample Business Plans

Glassteks, Inc.

GLASSTEKS INC.

STATEMENTS OF CASH FLOWS - YEAR 3

	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12	TOTAL YEAR 3
BEGINNING BALANCE	$ 879,580	$ 35,657	$ 402,565	$ 768,029	$ 199,286	$ 562,444	$ 924,158	$ 1,278,885	$ 342,043	$ 701,757	$ 1,156,884	$ 1,619,442	$ 879,580
CASH FLOW FROM OPERATIONS													
Cash Sales	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Credit Accounts	$ 409,600	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 614,400	$ 614,400	$ 614,400	$ 6,348,800
Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
TOTAL CASH RECEIPTS	$ 409,600	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 512,000	$ 614,400	$ 614,400	$ 614,400	$ 6,348,800
TOTAL CASH AVAILABLE	$ 1,289,180	$ 547,657	$ 914,565	$ 1,280,029	$ 711,286	$ 1,074,444	$ 1,436,158	$ 1,790,885	$ 854,043	$ 1,316,157	$ 1,771,284	$ 2,233,842	$ 7,228,380
CASH PAID OUT													
Purchases	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Gross Wages	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 19,592	$ 19,592	$ 21,036	$ 240,880
Payroll Benefits	$ 8,431	$ -	$ -	$ 8,431	$ -	$ -	$ 8,431	$ -	$ -	$ 8,431	$ -	$ -	$ 33,724
Fringe Benefits	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 4,086	$ 49,032
Supplies	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 300	$ 3,600
Repairs & Maintence	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 45,000
Advertising	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 30,000
Car & Travel	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Accounting & Legal	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 18,000
Lease	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 10,833	$ 129,996
Telephone	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 500	$ 6,000
Utilities	$ 3,000	$ 3,000	$ 3,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 5,000	$ 5,000	$ 47,000
Insurance	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 1,000	$ 12,000
Interest	$ 24,827	$ 24,291	$ 23,751	$ 23,207	$ 22,660	$ 22,108	$ 21,553	$ 20,993	$ 20,430	$ 19,862	$ 19,291	$ 18,716	$ 261,689
Engineering	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal	$ 77,819	$ 68,852	$ 69,756	$ 77,199	$ 70,971	$ 71,863	$ 78,295	$ 69,304	$ 72,185	$ 78,604	$ 70,602	$ 71,471	$ 876,921
Loan Principle	$ 75,704	$ 76,240	$ 76,780	$ 77,324	$ 77,871	$ 78,423	$ 78,978	$ 79,538	$ 80,101	$ 80,669	$ 81,240	$ 81,816	$ 944,684
Capital Purchase	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,300,000	$ -	$ -	$ -	$ -	$ 1,300,000
Deposits	$ 1,100,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,100,000
Reserves	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Corp Tax	$ -	$ -	$ -	$ 926,220	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 926,220
CASH PAID OUT	$ 1,253,523	$ 145,092	$ 146,536	$ 1,080,743	$ 148,842	$ 150,286	$ 157,273	$ 1,448,842	$ 152,286	$ 159,273	$ 151,842	$ 153,287	$ 5,147,825
ENDING CASH BALANCE	$ 35,657	$ 402,565	$ 768,029	$ 199,286	$ 562,444	$ 924,158	$ 1,278,885	$ 342,043	$ 701,757	$ 1,156,884	$ 1,619,442	$ 2,080,555	$ 2,080,555

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STATEMENTS OF CASH FLOWS	START UP	BEGINNING OF YEAR 1	BEGINNING OF YEAR 2	BEGINNING OF YEAR 3
BEGINNING BALANCE	$ 1,000,000	$ 505,000	$ 282,534	$ 879,580
CASH FLOW FROM OPERATIONS				
Cash Sales	$ -	$ -	$ -	$ -
Credit Accounts	$ -	$ 1,180,000	$ 4,403,200	$ 6,348,800
Loans	$ 2,800,000	$ 4,300,000	$ 600,000	$ -
NET CASH FLOW FROM OPERATIONS	$ 2,800,000	$ 5,480,000	$ 5,003,200	$ 6,348,800
TOTAL CASH AVAILABLE	$ 3,800,000	$ 6,480,000	$ 5,285,734	$ 7,228,380
CASH PAID OUT				
Purchases	$ -	$ -	$ -	$ -
Gross Wages	$ -	$ 240,880	$ 240,880	$ 240,880
Payroll Benefits	$ -	$ 23,486	$ 31,314	$ 33,121
Fringe Benefits	$ -	$ 34,050	$ 44,946	$ 49,032
Supplies	$ -	$ 3,600	$ 3,600	$ 3,600
Repairs & Travel		$ 45,000	$ 45,000	$ 45,000
Advertising	$ 30,000	$ 60,000	$ 30,000	$ 30,000
Car & Travel	$ -	$ -	$ -	$ -
Accounting & Legal	$ 20,000	$ 38,000	$ 18,000	$ 18,000
Lease	$ -	$ 129,996	$ 129,996	$ 129,996
Telephone	$ -	$ 6,000	$ 6,000	$ 6,000
Utilities	$ 30,000	$ 77,000	$ 47,000	$ 47,000
Insurance	$ 20,000	$ 32,000	$ 12,000	$ 12,000
Interest	$ -	$ 261,634	$ 325,321	$ 261,689
Engineering	$ 20,000	$ 20,000	$ -	$ -
Subtotal	$ 120,000	$ 971,646	$ 934,057	$ 876,318
Loan Principle	$ -	$ 550,821	$ 844,122	$ 944,683
Capital Purchase	$ 3,175,000	$ 4,675,000	$ 2,600,000	$ 1,300,000
Deposits	$ -	$ -	$ -	$ 1,100,000
Reserves	$ -	$ -	$ -	$ -
Corp Tax	$ -	$ -	$ 27,974	$ 926,220
CASH PAID OUT	$ 3,295,000	$ 6,197,467	$ 4,406,153	$ 5,147,221
ENDING CASH BALANCE	$ 505,000	$ 282,533	$ 879,580	$ 2,081,158

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US EPA ARCHIVE DOCUMENT

GLASSTEKS INC.

BALANCE SHEET	**END OF YEAR 1**	**END OF YEAR 2**	**END OF YEAR 3**
ASSETS			
CURRENT ASSETS			
Cash	$ 282,534	$ 879,580	$ 2,081,158
Accounts Receivable	$ 614,400	$ 921,600	$ 1,228,800
Inventory	$ -	$ -	$ -
Other Current Assets	$ -	$ -	$ -
TOTAL CURRENT ASSETS	$ 896,934	$ 1,801,180	$ 3,309,958
FIXED ASSETS			
Land	$ -	$ -	$ -
Building	$ -	$ -	$ -
Equipment	$ 4,675,000	$ 7,275,000	$ 8,575,000
Vehicles	$ -	$ -	$ -
TOTAL FIXED ASSETS	$ 4,675,000	$ 7,275,000	$ 8,575,000
LESS: Accumulated Depreciation	$ 735,000	$ 1,865,000	$ 3,406,667
TOTAL NET FIXED ASSETS	$ 3,940,000	$ 5,410,000	$ 5,168,333
TOTAL ASSETS	$ 4,836,934	$ 7,211,180	$ 8,478,291
LIABILITIES			
CURRENT LIABILITIES			
Subtotal	$ -	$ -	$ -
Payroll	$ 7,829	$ 7,829	$ 6,022
Income Tax Payable	$ 27,974	$ 926,220	$ 1,485,367
Current Portion of Debt	$ 844,122	$ 944,683	$ 1,329,733
TOTAL CURRENT LIABILITIES	$ 879,925	$ 1,878,732	$ 2,821,122
LONG-TERM DEBT	$ 3,749,179	$ 3,505,057	$ 2,560,374
LESS: CURRENT PORTION	$ 844,122	$ 944,683	$ 1,329,733
TOTAL LONG-TERM LIABILITIES	$ 2,905,057	$ 2,560,374	$ 1,230,641
TOTAL LIABILITIES	$ 3,784,982	$ 4,439,106	$ 4,051,763
Capital Stock	$ 1,000,000	$ 1,000,000	$ 1,000,000
Retained Earnings	$ 51,952	$ 1,772,075	$ 3,426,529
STOCKHOLDER'S EQUITY	$ 1,051,952	$ 2,772,075	$ 4,426,529
LIABILITES & STOCKHOLDERS' EQUITY	$ 4,836,934	$ 7,211,181	$ 8,478,292

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PROJECTED PROFIT AND LOSS STATEMENT

	YEAR 1	YEAR 2	YEAR 3
REVENUES	$ 1,794,400	$ 2,240,000	$ 3,136,000
OPERATING EXPENSES			
Salaries	$ 240,880	$ 240,880	$ 240,880
Payroll Expenses	$ 31,314	$ 31,314	$ 31,314
Services	$ 34,050	$ 44,946	$ 49,032
Supplies	$ 3,600	$ 3,600	$ 3,600
Repairs	$ 45,000	$ 45,000	$ 45,000
Advertising	$ 60,000	$ 60,000	$ 30,000
Car & Travel	$ -	$ -	$ -
Lease	$ 129,996	$ 129,996	$ 129,996
Telephone	$ 6,000	$ 6,000	$ 6,000
Utilities	$ 77,000	$ 47,000	$ 47,000
Insurance	$ 32,000	$ 12,000	$ 12,000
Other Expenses	$ 20,000	$ -	$ -
Depreciation	$ 735,000	$ 1,130,000	$ 154,667
Accounting & Legal	$ 38,000	$ 18,000	$ 18,000
TOTAL EXPENSES	$ 1,452,840	$ 1,768,736	$ 767,489
OPERATING PROFITS	$ 341,560	$ 471,264	$ 2,368,511
INTEREST EXPENSE	$ 261,634	$ 10,662	$ 9,676
Subtotal			
NET INCOME BEFORE TAXES	$ 79,926	$ 460,602	$ 2,358,835
STOCKHOLDER EQUITY BoY	$ 1,000,000	$ 1,051,952	$ 2,772,075
NET INCOME	$ 51,952	$ 1,720,123	$ 2,754,454
Less: Deductions/Dividends	$ -	$ -	$ 1,100,000
STOCKHOLDER EQUITY EoY	$ 1,051,952	$ 2,772,075	$ 4,426,529

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Earthbound Tire Reclamation Company

Sample Business Plan #3

Location:	Carbondale, Pennsylvania
Business Description:	Manufacturer and wholesaler of equipment to compact spent tires
Founder:	James Bryant
Year Founded:	1994
Starting Capital:	Seeking $200,000 of debt financing
Sales 1st Quarter	N/A
Owners' Equity:	N/A
Employees:	7
Educational Background:	N/A

Earthbound Tire Reclamation Company was established to manufacture and market apparatus used to compact 'surplus' tires so resultant volume of material is significantly less. Compacted material can be disposed of in a manner that requires less landfill space or, when combined with traditional construction aggregate, can be used as a residential/commercial building component.

The company is seeking external financing of $200,000 to achieve its goal of introducing its technology to the marketplace. With this modest initial investment, the company projects significant sales and profit levels by the completion of its 3rd year of operation.

US EPA ARCHIVE DOCUMENT

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RECYCLING USED TIRES FOR CONSTRUCTION BLOCK
COMPANY NAME: Earthbound Tire Reclamation Company

Executive Summary

Industry:	Automobile and truck tire reclamation and compaction.
Product:	Apparatus and ancillary products to compact tires and combine with conventional construction aggregate for building blocks.
Recycling Level:	Primary
Waste Generated:	None.
Management Team:	A capable and aggressive management team has been assembled which combines many years of experience in engineering, manufacturing, marketing and sales.
Projected Financing Results :	The company's three year projections include sales ranging from $1.264 million in the first year to over $ 3.163 in the third year. Projected earnings will grow to an estimated $2.448 million in year three.
Capital Requirements:	Initial capital requirements are $200,000 including $9,900 for capital purchases, $17,000 for capital improvements and $173,000 for working capital.
Processing Overview:	The company has developed a proprietary, patented technology for its compaction and construction block process. Additional information may be obtained by potential investors once a binding nondisclosure statement has been signed and a $5,000 retainer has been issued.
Raw Material Supply:	The company believes an unlimited quantity of feedstocks available.
Competition:	Recycling is a very young industry and post consumer rubber compaction is a highly specialized niche within the industry. As a result, competition is non-existent in all but a very few U.S. markets.
Customers:	There are a variety of customers that would be interested in licensing or purchasing the company's technology. Public and private landscape operators, general contractors engaged in medium to large scale construction projects and enterprises which collect waste tires for re-sale are ideal candidates for tire compaction technology. Invariably this market will expand as additional refinements and applications of the compacted tires are devised.
Facility Requirements:	The company is a full service machining and fabrication company which rents a 28,600 square foot building situated on a 1.69 acre parcel of land.

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DESCRIPTION OF BUSINESS

The disposal of waste tires has become a troublesome problem for sanitary landfills across the country. Some methods of legal disposal have involved shredding whole tires with the intent to bury or stockpile the shreddings. However, landfill space is at a premium and state laws are currently regulating the disposal of waste so as to diminish the number of tires in landfills. Scrap tires are becoming an expensive nightmare for local governments. Scrap tire dumps can be extremely dangerous, and state regulations are making these dumps expensive to run.

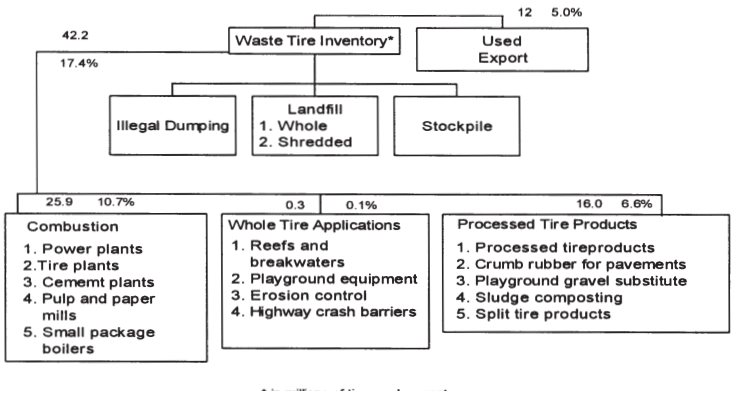
Average tipping fees in some states in the U.S. range from $50 to $60 per ton, resulting in excessive costs for scrap tire disposal. Waste tires have become one of the most challenging components of the waste stream to manage. Whole tires that are buried tend to 'float' to the surface of the landfills, jeopardizing any hope of land reclamation. When improperly managed and stored, waste tires are a perfect breeding ground for rodents, snakes, mosquitoes and other pests. There is also a very real potential for fire at improper sites.

The public often assumes that the tires collected or gathered for recycling eventually will be reborn into new products. Unfortunately, this is not always the case. While there are companies that accept tires for processing (for a fee) only a few sell the reclaimed components for stock in the manufacturing process. Many such firms chip or shred waste tires and then landfill the material, passing the tipping fee and processing cost on to the original supplier.

According to estimates made by the New York State Department of Environmental Conservation (NYS DEC), 15 million scrap passenger tires and 1.4 million truck tires are generated annually in New York. In addition, NYS DEC estimates that 19 to 38 million scrap tires are stockpiled at sites all across New York State. While productive uses (via energy recovery and recycling) are known, and more are emerging, none have reached a level of market penetration that diverts a significant quantity of tires from disposal (legal and illegal).

There are three categories of market applications for tire derived rubber: 1) as a fuel substitute/supplement in coal-fired boilers; 2) in civil engineering applications; and 3) in the manufacture of commercial rubber products. Earthbound Tire Reclamation Company believes the utilization of spent tires for civil engineering applications, specifically applying company technology is the most environmentally safe and economical approach to tire disposal or reuse.

Estimated Destination of Scrap Tires



TIRE COMPACTION EQUIPMENT

In response to the previously-mentioned concerns with scrap tires, the company has developed a high density tire compactor to provide safe, economical and efficient volume reduction. The equipment can accommodate up to 20 tires per cycle with a reduction in total volume of approximately 85% in a matter of minutes. This unique, highly specialized piece of equipment provides the most efficient and practical method for the storage, handling, disposal and control of scrap tires.

After compaction, the compressed bundle is held together by four equally spaced stainless steel or coated and waxed carbon steel wires, supplied by the company. After the bundle has been banded, the machine returns to its original position ready to begin another cycle. The compressed and banded tire bundle is removed, and simultaneously the loading sequence can begin. Equipped with emergency stop buttons and fully guarded, the equipment has been designed with the operator's safety in mind. The concept, design and engineering of the machine has focused on basic operation without detracting from production output. Operation of the machine is geared for the general laborer. The equipment is easily transportable for the remedial site work and/or for general regular route pick-ups.

In the event servicing is needed, the equipment, through design modification has made potential problem areas easily accessible. The customer is able to easily remove any part and return it to a service department for replacement or repair. Removal instructions are provided with the machines, but may be reinforced through a telephone call to the company, virtually eliminating the use of service technicians. The tire densification equipment does not require intervention from any third party to start or operate the machine, once delivery is made.

The compaction provides a long-awaited answer to another problem of the scrap tires by significantly reducing the costs of transportation. Normally, a tractor trailer with 900 to 1,000 tires is considered a full load. However, tires compacted with this equipment would allow up to 2,400 tires as the maximum amount of tonnage the trailer is legally allowed to haul. Currently the average cost for disposal is running approximately $1.35 per tire. With 1,000 tires, the load would be worth $1,350 less operating costs. With the company's products, the same size trailer picking up tires at $1.35 each would realize revenues of $3,250 minus operating costs.

Building Block Technology

The equipment can compact tires to save space, reduce shipping costs, and reduce fire hazards. The question then is, what to do with the bundles of tires?

The answer to that question is a construction block product being developed in conjunction with the company's compaction equipment. A compacted bundle of tires is put into a compaction mold. The mold is then filled with concrete and 12 hours later a 3' x 3' x 3' reinforced building cube with an R factor of between 34 and 38 is produced. This cube can be used for a variety of building and preservation projects.

One such product is the tire bunker. This is a building to store the tire bales for future use. By starting with a minimal size building and continuing to expand as tires are received and building blocks are manufactured, the building can be expanded as needed. Once the building is complete it can be completely sealed to eliminate fire hazards and the eyesore of scrap tire piles within the community.

Other potential uses for the building blocks include retaining walls along roadways, bin walls for keeping material such as different grades of sand or stone separate, storage facilities to be partitioned off and rented as self store units, or to make artificial reefs to attract bait fish which in turn will attract game fish for the local resident and tourist to catch and enjoy.

A major factor to be considered in the assumption of a project such as building blocks is the cost of production and income benefits derived by the manufacture of the blocks. As with our compaction equipment, the company is confident the building blocks will prove to be a major income generator for those customers with the potential to produce the blocks.

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With the compaction of 20 scrap tires into a 26" to 28" bale, assume that a disposal fee of at least $1 has been collected for each tire, generating an income of $20 per bale and assume that the bale will be used as the core for reinforcing the building blocks. By molding a cube with the addition of approximately 1/2 yard ($12) of concrete, a final product is produced with a worth in excess of $25. Thus, the blocks become an add-on product which increases net revenues to any company producing the cubes. By using the company's equipment, $12 of material (concrete) can generate $45 income. Blocks can be produced with weather-proof and aesthetically pleasing exterior surfaces.

The company's objective is to develop and market tire densification equipment and resultant products utilizing bundled tires as a base of manufacturer. Eighteen months of research and development have resulted in the manufacture of a prototype of a high density tire compactor which provides a safe, economical and efficient method of reducing scrap tire volume. The product is capable of reducing up to 20 tires at a time with approximately 85% reduction in total volume.

The company will manufacture two types of units, a tire compactor for passenger tires and another compactor for larger truck and commercial tires. The tire compactors are hydraulically operated machines designed to compact truck and passenger tires into a compressed bale for easy handling, storage and shipping. The tire compactors will compact up to 20 tires into a bale approximately 25 inches long. This bale is held in a compressed state by the application of four interlocking wires. While the tire compactors and tire densification itself are unique to the industry, equally as exciting is our new project, which integrates densified tires into building blocks.

Supply of Raw Feedstock

According to recent data released by U.S. E.P.A., 77.6% of waste tire inventory is disposed of via illegal dumping, landfills or stockpile for yet unknown methods of disposal. Earthbound concentrates its technology and resources on the material disposed annually as 300,000 whole tires, an industry where but a few applications have been developed for reuse or disposal. The total "opportunity" is approximately 39 million pounds of waste tire rubber annually.

Companies interested in adopting or licensing Earthbound's tire compaction technology will find an ample supply of spent tires to incorporate in the engineering applications recommended by the company.

Business Plan Risks and Anticipated Solutions

There are associated risks with any new venture. The management team's experience would play a major role in reducing the number of risks which would typically confront a start-up recycling company. Some of the potential risks and anticipated solutions are listed below.

Risk:
- Inability to obtain sufficient start-up capital to begin operations.

Anticipated Solutions:
- The management of the company has estimated its capital needs at $200,000, but this is dependent upon the type and amount of equipment purchased during the start-up phase. Management will not begin operation without proper capitalization.

Risk:
- Increased need for feedstock.

Anticipated Solutions:
- Increased price paid for raw materials, recognizing , however, that this could lower the gross margin.
- Substitute other compactable materials in place of tires for construction block.
- Identify and market to other applications for compacted products.

Note: Due to the overwhelming amount of material available, a significant amount of competition would need to exist before it would have a detrimental effect on the company. A key strategy is to reduce this risk by quickly establishing the company in a secure market position.

THE MARKET

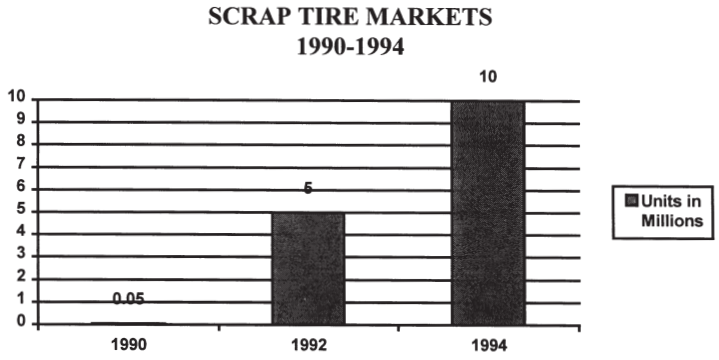
The company believes the present market momentum will move from a scrap tire waste problem–now being dealt with by the public sector – to a marketable commodity produced in the private sector.

The economics of scrap tire management differ depending upon whether the tires are stockpiled or part of the flow of tires generated annually. In the past, storage facility operators accepted tires for a modest fee, speculating that the tires would be a valuable commodity generating positive revenues for the operator. Based on this speculation, these operators typically failed to set aside funds to pay for the processing or disposal of those tires in the event the market did not develop as they had anticipated. Consequently, existing stockpiles represent stored material with a negative market value – that is, processors must receive payment to process these tires for use as either crumb rubber feedstock, civil engineering materials, or TDF.

Even whole tires generated as part of the annual flow are traded in negative prices. Tire collectors (referred to as "jockeys") demand and get fees as high as $2 per tire (even more for truck tires) from tire retailers and other generators. The collectors then pay tire facility operators, whether they are processing or tire storage facilities, fees typically ranging from $.25 to $.40 per tire. In properly operated facilities, these fees are used to purchase and maintain processing equipment and to provide working capital. Charging "tip" fees at the front end of the system helps to defray operating costs and enables recyclers to keep the selling price for tire-derived products more cost-competitive with their virgin counterparts.

The company's tire densification equipment is also designed to have a major impact on the transportation of tires. The company's philosophy with regard to scrap tires is "Why handle a tire any more than you have to?" In the current marketplace, transportation costs play a major role when it comes to moving, picking up and delivering tires. Presently, trucks can haul half of the legal allowable tonnage when carrying loosely loaded tires. To minimize transportation costs, tires must be reduced in size, i.e. through shredding, which is an expensive process, or through compaction, which is not.

At the present time there are an estimated three billion tires in the ground in landfills, dumps, or illegally discarded. The additional 270 million tires added per year illustrate most clearly the need for tire compaction.



In conclusion, The management of Earthbound believes that a sound business scenario starts with the end market potential and devises an economically viable way to address that market with a competitive product. Waste tires are no exception!

Any enterprise which stores, recycles, or has access to scrap tires is a potential user of company tire compaction and densification products. The following markets have been targeted as primary users of the company's compaction apparatus and construction building block component.

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Landfill Operations
Approximately 13,600 landfills exist where tires are stored

Tire Recyclers
The New York State Office of Recycling Market Development estimates that approximately 32 consumers of waste tires are operational in the Notheast United States

Federal, State, Local and Foreign Governments
Current public projects undertaken involve soil erosion breakwalls and underwater reefs. Banded scrap tires are being used in all of these projects. As environmental concerns are addressed to a greater extent, additional uses will be found for the mounting number of scrap tires in the world.

Waste Haulers
The reduction in transportation costs – in excess of one-half of previous amounts – presents an incentive for transportation firms to purchase the company's equipment with the expectation of increased profits.

Tire Manufacturers
The major tire manufacturers in the United States include Cooper Tire, Dunlop, Firestone, General Tire, B.F. Goodrich, Goodyear, Kelly Springfield, Michelin, Mohawk Rubber, Pirelli, Sumitomo Tire, and Uniroyal, in addition to a significant number of smaller manufacturers. These plants generate a significant amount of scrap tires on a yearly basis.

Transportation Companies
As previously noted, the reduction in transportation costs are in excess of one-half of previous amounts to transport scrap tires. This presents an incentive for transportation firms to purchase Earthbound equipment with the expectation of increased profits.

Waste Management Firms
Firms dealing in waste management and disposal, in many cases, refuse to accept scrap tires and refer potential clients to local tire companies for disposal. The company's equipment will enable such firms to address the problem — especially in light of the tipping fees charged — allowing the firm to add revenue to operations through the use and sale of the company's building cube technology.

An added advantage of Earthbound's process is that construction blocks can be produced on-site at building projects and where their application, composition and dimensions can be customized. The principal applications for Earthbound construction technology where on-site processing is desirable are:

- Erosion control systems
- Retaining walls
- Artificial reefs
- Piers
- Breakwaters
- Highway crash barriers
- Commercial building projects
- Heavy highway constructions

Initially, molds purchased by clients will be personally delivered, set up and operated by personnel from the parent company. This equipment will be closely monitored with extensive feedback and input requested from the user. These initial field units will be "showcased" and used as an intricate part of the evolving sales and marketing strategy. Initial marketing will focus on the United States and Canadian markets. Once the company is on firm footing, international markets will be targeted.

Timing for the marketing of the tire densification equipment is now. Management is confident that their tire compactors are entering the market at a crucial time. If the initial response of the potential customers and experts alike in the scrap tire trade is any indication of the product's expected success, the company's concepts will revolutionize the industry.

COMPETITION

The tire reuse industry is divided into three markets: fuel substitute or supplement in coal-fired boilers, civil engineering applications and remanufacture to other commercial rubber products. Companies active in the markets are not direct competitors in Earthbound's market niche (i.e. tire compaction). However, they are competitors for the feedstocks necessary for each to prosper.

Earthbound research confirms that suitable stockpiles of surplus tires exist in most regions of the country, at prices considerably less than the concrete aggregate material it replaces, to support the application of Earthbound construction technology.

Currently there are no direct competitors to Earthbound's construction block technology. The company has contacted the scrap tire management council and other trade entities and they have confirmed the exclusivity of this market.

MARKET SHARE

Tire compaction technology is a new to market concept and currently there are no competitors to the company's tire compaction and construction block technology. Earthbound is seeking patent protection for its technology. The company has no knowledge of other enterprises marketing a process or devise of this nature.

The introduction of Earthbound technology in any region of the country will position that firm as the 'first in' and should give it preferential access to tire supplies and a receptive construction industry interested in reducing its bottom line through the use of cheaper materials.

LOCATION

The company rents a 28,600 square foot building which consists of 27,800 square feet of manufacturing and 800 square feet of office space. This building sits on 1.67 acres of land and the building is situated to allow for easy future expansion.

The company is a full service machining and fabrication company with a wide variety of equipment for turning, milling, drilling, welding and fabrication. A complete facilities list is included in the financial forescasts. The present equipment is sufficient to manufacturer the tire compactor and the molds for the future cube. However, the production efficiency could be improved with the addition of a horizontal boring mill and a plasma cutter. All necessary tooling and fixtures can be manufactured in-house.

PRICING

The company has applied for patents on the tire densification equipment and building block compaction technology. Patents are pending and due to the competitive nature of the industry, confidentiality and security of patent details is of paramount importance.

PROMOTION

Sales of the compaction products produced by the company will be accomplished through a subsidiary company.

The personnel of the parent company have an intimate knowledge of the scrap tire industry. The marketing of the tire densification equipment has been significantly successful due to the expertise of the principals in the firm. Their knowledge of the tire and waste management industry has saved valuable time and effort in the identification of prospective customers.

The subsidiary company will attend conferences and trade shows to present the tire densification equipment and products to potential customers and to be constantly apprised of the latest environmental concerns and legislation involving the disposal of scrap tires.

- The American Retreaders Association
- The Institute of Scrap Recycling Industries Convention
- Exhibition of Equipment, Products and Technologies for the Recovery and Recycling of Raw and Reworked Materials
- North American Building Material Distribution Convention
- Atlantic Building Supply Dealers Association Industry Show

Advertising in select trade magazines and industry journals will be utilized to maximize geographical coverage throughout the country. Magazines and journals targeted for advertising or articles include:

- **Biocycle** - A journal for municipal and industrial managers of solid waste and biosolids, focusing on recycling techniques- from collection and processing to materials and marketing.
- **Recycling Times** - Produced by the Environmental Industry Associations, this journal covers commercial and municipal solid waste recycling and is geared toward public interest organizations, producers and distributors of recyclable material, buyers and sellers of recyclable wastes and private and municipal waste professionals.
- **Recycling Today** - A journal which covers issues pertaining to the traditional scrap recycling market.
- **Resource Recycling** - A journal which focuses on multi-material, post consumer recycling and composting including spent rubber.
- **Waste Handling Equipment** - A publication for professionals in the solid and liquid hazardous waste management industry.

To remain apprised of the overall industry, Newsletters and Association Bulletins published by the United Gasoline Dealers and Retail Association will be utilized for current data on local, national and international collection and recovery operations.

FORM OF OWNERSHIP

Earthbound is a limited liability company formed in Pennsylvania in 1994. The LLC form of ownership was established to protect ownership from debts incurred by the company and to tax shareholder profits at individual tax rates.

MANAGEMENT

The company has assembled a strong management team that encompasses the engineering, sales and manufacturing expertise needed for the company to be a viable enterprise.

James Bryant, Chairman and President, of the company has over 35 years of experience in machining and manufacturing. He started his current enterprise in 1980, manufacturing parts for numerous manufacturing applications for a variety of industries. He has designed and manufactured commercial apparatus for several industries and has received over 60 patents.

William Wright, General Manager of Manufacturing at the parent company, has over 34 years of experience in manufacturing and consulting ventures. He has implemented and overseen re-organization and expansion plans at several companies and his sales and marketing experience has been valuable in introduction of the company's tire compaction products.

Annette Coffey, Vice President of Sales at the subsidiary, has in-depth experience in market sales, strategy, public and customer relations. He has an excellent performance record at several companies in developing new business and in the sharpening of employer's sales objectives and effectiveness.

Ned Nielson, Vice President of Marketing at the subsidiary, has a wide variety of experience in the public and private sector. He was an assistant manufacturing manager for a clothing manufacturer for four years, and has spent several years in the real estate and finance business. He is a registered mortgage broker in the State of New York and has consulted inventors and entrepreneurs in their business endeavors.

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WILLIAM WRIGHT

RESUME

EMPLOYMENT

1989 - Present — General Manager
Earthbound Tire Reclamation Company
Carbondale, Pennsylvania

Earthbound Tire Reclamation Company is a manufacturer of tire compaction equipment. Responsibilities include directing/coordinating all plant operations and company policies and goals. Coordinates activities among operations, engineering, sales and maintenance functions.

1975 - 1989 — Production Supervisor
Coastal Steel Fabricators
Edgecomb, Pennsylvania

Coastal Steel Fabricators is a machine shop that fabricates steel for the commercial construction trades with annual sales in excess of $5.8 million. Responsibilities included reviewing production orders and schedules, reviewing quantities and specifications of products, scheduling delivery dates, preparing operational schedules, inspecting machines and equipment, developing standard operating procedures and working practices.

1971 - 1989 — Private Consulting Engineer

Acted as independent engineer for several manufacturing operations specializing in factory layout and process control. Have consulted for over 100 companies drafting scale drawings showing efficient location of equipment, materials and warehousing based upon available floor space and sequence of operations to be performed.

1964 - 1971 — Engineer
U.S. Army Corps of Engineers

Performed several engineering functions on over 24 projects involving heavy highway, stream erosion control, commercial airport and intermodal transportation construction.

EDUCATION

B.S. Engineering
Union College
Schenectady, New York

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ANNETE COFFEY

RESUME

EMPLOYMENT

1995 to date — Vice President of Sales
Earthbound Tire Reclamation Company
Carbondale, Pennsylvania

Earthbound Tire Reclamation Company is a manufacturer of tire compaction equipment. Responsibilities include preparing sales projections and analyzing sales statistics to formulate sales and marketing strategies, reviews market analysis to determine customer needs, volume potential, price schedules and discount rates. Advise V.P. of Marketing of customer and industry data and trends that impact the company's marketing strategy.

1989 - 1995 — Export Manager
Johnson Sporting Goods
Wilson, Pennsylvania

Johnson Sporting Goods Produces a broad range of sporting goods for hunting, fishing and camping enthusiasts. Responsibilities included directing $21 million of foreign sales, negotiating contracts with sales and distribution centers, researching import-export tariffs, licenses and restrictions. Arranged for shipping details such as export licenses, customs declarations, packing and shipping and routing of products.

1981 - 1989 — Buyer
Goodman Department Stores
Philadelphia, Pennsylvania

Goodman Department Stores is a full service retailer of apparel, household items and sporting goods. Responsibilities included purchasing annual inventory of $2 million in houseware items, negotiated sales with manufacturing representatives, assessing demand for specific merchandise and authorized invoices or return of merchandise.

1978 - 1981 — Assistant Buyer
Goodman Department Stores
Philadelphia, Pennsylvania

Assisted Principal Buyer of Housewares, verified quantity and quality of stock received from manufacturers, authorized payments or returns of shipments, and issued marketing information with respect to pricing, seasonal codes and style numbering.

EDUCATION

B.A. Economics
Kent State University
Canton, Ohio

NED NIELSON

RESUME

EMPLOYMENT

1995 - Present	Vice President of Marketing Earthbound Tire Reclamation Company Carbondale, Pennsylvania

Earthbound Tire Reclamation Company is a manufacturer of tire compaction equipment. Responsibilities include researching and developing market analysis by determining customer needs and volume potential, coordinating all media advertising and trade shows.

1990 -1995	Assistant Manufacturing Manager Belco Industries Chicago, Illinois

Belco Industries produces men's and women's suits and accessories sold under private label in over 175 department stores in the United States. Responsible for preparing production schedules for one of three production shifts, including reviewing sales forecasts and quotas to meet shipping dates, determining appropriate manufacturing processes, tools and personnel requirements for specific production runs, prepared lists of required materials, tools and equipment for new product lines.

1980 - Present	Licensed Real Estate Broker

Independent real estate broker with specialization in commercial properties. Assist clients in buying and selling of land and facilities, prepare lease/sell contracts, escort clients to properties and act as facilitator/mediator between buyer, seller, lenders and attorneys.

1982 - 1990	Purchasing Agent State of New Jersey Trenton, New Jersey

Procured goods and services on behalf of several state agencies. Negotiated with vendors to obtain specifications, prices, availability, delivery and service contracts, prepared purchase orders and bid requests, reviewed bid proposals and awarded contracts. Revised computerized procurement records which monitored items purchased, costs, delivery, product quality and current inventory.

EDUCATION

B.A. Economics
St. John's University
New York, New York

FUNCTIONS OF MANAGEMENT TEAM					
SPECIAL FUNCTIONS	Chairman and President	General Manager of Manufacturing	Vice President of Marketing	Vice President of Sales	Outside Agents
Sales	X				
Public Relations		X	X	X	
Advertising		X	X		
Risk vs. Benefits	X	X			X
Office Management		X	X		
Legal					X
Tax					X
Technology	X				X

ISO 14000 is the most comprehensive environmental quality management initiative ever undertaken and it defines an organizations environmental policy. Although ISO 14000 certification may be premature at this time, the company is already embracing the ISO 14000 culture exhibited by management's commitment in developing reliable technology, introducing the technology to the marketplace in a progressive manner and in providing first class customer support to end users.

The ISO 14000 standard will support Earthbound's goals of achieving compliance with legal requirements, establishing internal environmental quality policies and managing marketplace expectations. These goals will be accomplished by implementing environmental quality management systems, environmental audits, environmental performance evaluations and product life cycle assessments. All of these activities comprise a strategic environmental quality program that can be a distinctive competitive advantage for the company and Earthbound will encourage business partners to pursue a similarly responsible environmental policy.

The company will rely heavily on customer satisfaction as its most effective promotional weapon. Recognizing this as a continuous effort, Earthbound will assist customers in devising a scrap tire management plan, the company will assist individuals or firms interested in licensing or purchasing Earthbound's technology and implement a scrap tire source plan to identify a continuous supply of feed stock to support an expanding market of construction material from compacted tires. Minimally, the plan will review the following criteria:

- Determination of the number and location of existing scrap tire collection sites along with an estimation of present and future capacity.
- The location and size of existing tire dumps, piles, landfills with more than 1,500 scrap tires stored above ground.
- The locations of existing scrap tire collection sites along with an estimation of present and future capacity.
- The name of owner/operator of each scrap tire collection site along with the address and telephone number of each site and owner.
- Inventory of businesses which remove tires from vehicles.
- Identification of handlers transporting new and used tires to the manufacturer for warranty adjustment.

The company will not process or accept material considered hazardous. There are no restrictions or requirements established by the Environmental Protection Agency which would affect the operations of the company. Employee safety is a major concern, and the company would endeavor to meet or exceed all regulations as set forth by the Occupational Safety and Health Act (OSHA). The management team has significant experience and training in OSHA compliance.

Earthbound has devised a scrap tire management plan that applies to scrap tire collection processing and disposal. As part of its customer service matrix, the company will assist firms that license or purchase Earthbound technology, in devising a customized scrap tire management plan that will conform to applicable state and local regulations. The following is a sample plan for an Earthbound client:

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A TIRE COLLECTION AND PROCESSING SITE CONTAINING IN EXCESS OF 1,500 SCRAP TIRES OUTSIDE:

Physical/Environmental

- Tires may only be accumulated in designated areas.
- Piles to be no more than 20' high, 50' wide, 250' long.
- Minimum separation of 60' between piles.
- Piles to be at least 100' from perimeter of property and 100' from any buildings.
- Piles to be maintained (i.e., under a roof or processed) to limit mosquito breeding.
- Piles to be accessible to fire fighting equipment
- Site operator should provide acceptable financial security to cover cost of ultimate disposition and final closure.
- Tire storage areas must be kept completely contained within fences that limit access.
- Rows between tire piles must be kept free of weeds and other vegetation.
- Each facility must display its emergency procedures plan and inspection approval by local fire enforcement agencies
- Establish dirt berm at the perimeter.
- Approach road to be maintained in good condition and passable by fire fighting equipment.
- Install lightening rods at highest point by piles.
- Tires should not be stored on an asphalt base.
- Adequate fire fighting equipment should be kept on site.
- All personnel should be trained on all fire related equipment.

Emergency Procedures

- A list of names and telephone numbers of individuals to contact in case of fire, flood or other emergencies.
- A list of emergency response equipment, maintained in proper operating conditions, and how it should be used during an emergency.
- A description of procedures to follow at the facility during an emergency.
- All tire disposal sites should be in compliance with all storage permitting requirements approved by the National Fire Prevention Association and local fire enforcement agencies.

FINANCIAL FORECASTS

Financial Data

This business plan was developed to introduce the company to prospective investors in order to obtain financing to facilitate the growth of this company. It is hoped the growth and profitability of the tire densification product line and the construction building block system as outlined in the attached financial projections will interest investors who want to help finance these exciting opportunities.

The financial forecasts for Earthbound present a conservative, yet realistic, estimation of the financial health of the company based on solid projections with respect to sales, expenses and profitabilty.

The financial forecasts are presented in 3 year phases, cash flow statements, present monthly projections of sales, expenses and cash reserves.

Currency and Rounding

The U.S. dollar is used throughout this document. The yearly financial forecasts are rounded to thousands of U.S. dollars. Some of the line items are affected by rounding errors.

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Note to the Forecasts and Assumptions

These financial forecasts, as well as the underlying assumptions, present, to the best of the management's knowledge and belief, the expected financial position, results of operations and cash flows for the forecasted period. The forecasts reflect management's judgment, as of the date of this document, of the expected conditions and the expected course of action of NatureTrail. The assumptions described herein are those that management believes are significant to the forecast. There will frequently be differences between the forecasted and actual results, because events and circumstances do not occur as expected. Accordingly, the financial forecasts and assumptions should be used with caution as actual results may differ materially from those shown in these forecasts.

Sources and Uses of Funds

In these projections, Earthbound is planning to obtain a business loan or other form of investment totalling $200,000. Terms of this note include 12% interest over three years, payable quarterly from the initiation of the loan.

Sources and Uses of Funds Table

The following table shows forecasted sources of funds described in the Memorandum and the uses of funds during the initial two-year start-up phase.

Sources	
Stock of Loan(s)	$200,000
Total sources:	200,000
Uses	
Capital Purchases	9,900
Capital Improvements	17,000
Working Capital	173,000
Total Uses	$200,000

Accounts Payable

Accounts payable balances are calculated based on selling, administrative and research and development expenditures. It is assumed that manufactured items are paid for upon receipt, although as Earthbound develops operating the company would probably take more credit with suppliers.

Accrued Liabilities

During the initial development phase of the company, founders took deferred compensation. These deferrals are included in this category and are repaid with the completion of the financing described in this memorandum.

Long-term Liabilities

These forecasts assume NatureTrail obtains $200,000 of debt in the first year.

Notes to the Balance Sheet

Cash

Cash balances grow as the business expands. No assumptions have been made in these forecasts for dividends, employee bonuses or cash reinvestment, although some form of distribution or reinvestment of excess cash is expected.

Accounts Receivable

Accounts receivable balances are calculated on a net 15 basis. All forecasted sales are credit card purchases (the majority) or check or money order, therefore bad debts are not expected and prompt payment can be assumed.

Inventory

Inventory is made up of finished goods as manufacturing will be sourced out. Inventory turnover is assumed to be 30 days.

Other Current Assets
This category includes deposits on manufacturing as well as other miscellaneous deposits. It is assumed that 50% deposits on manufacturing are required, although in reality, as the company develops operating history, this requirement would lessen.

Fixed Assets

Milling
1- Kerney Tracker #2 Horizontal Mill
1- Milwaukee #38 Horizontal Mill
1- Cincinnati #4 Horizontal Mill
1- Nichols Horizontal Hand Miller
2- Bridgeport Mill
2- Pratt & Whitney Tape-O-Matic NC
1- Pratt & Whitney CNC

Lathes
1- Harrison M400 CNC Lathe
1- Bardons & Oliver #3Turret Lathe
1- Herbert #5 Turret Lathe (Air Chuck)
1- American Turnmaster Engine Lathe 18 x 60 Gap 28
1- Lablond Engine Lathe 18" x 102
1- Mazak Engine Lathe 10" x 80"
1- Hitachi Seiki Turret Lathe w/Bar Feed
1- Gisholt Turret Lathe w/Air Chuck 24" Swing

Drill Presses
1- 6 Spindle Drill Press
2- Dayton Drills 1/2
1- 2 Spindle DRK
1- American Radial Arm Drill 5 x 13 Column
1- Hydraulic Pressure Tester (3,000 psi)

Presses
1-Rockford Punch Press 5 Ton
1- Rockford Punch Press 35 Ton
1- Mubea HPSN 35 Ton Iron Worker
1- Hydraulic Press 50 Ton

Notes to the Profit and Loss Statement
Because of the proprietary nature of the information contained in the income statements, management has elected to show only the number of units of each category of item sold and show the sales and cost of goods in aggregate form. Additional detailed information is available upon request. This information includes comprehensive cost breakdowns of each product and the associated pricing and revenue assumptions.

Sales
Sales are shown as gross, discounts are not anticipated at this time.

	Year 1	Year 2	Year 3
Gross Sales	$1,208,000	$2,240,000	$3,136,000

As discussed previously, management believes that given appropriate working capital, the scale-up these increases in sales volume represent are entirely realistic and entirely achievable in the marketplace. The foundation for growth after the end of three years will be dependent upon excellent relationships with material suppliers and through the development of industry contacts.

Unit Sales and Costs

The build-up of unit sales by category is provided in greater detail than net sales or manufacturing costs. As noted above, detailed unit sales forecast by product are available upon request. The units sales figures provide a concise picture of the growth of the business and the periods in which new product categories are introduced.

The most significant increase in terms of the scale-up factor is from year 1 to year 2. The most significant increase in terms of real units is the scale-up in volume between year 2 and year 3. The financing that this offering memorandum describes is designed to provide the resources to successfully manage both these transitions. The $200,000 of equity financing will seed this expansion and provide the funds to hire the personnel and develop the infrastructure that can take the company from a start-up to a well-coordinated operating company in the first 2 years.

Unit	Number of Units Sold		
	Year 1	Year 2	Year 3
Compactor	18	40	56
Building Block Molds	540	1,200	1,680

Cost of Production

Compactor	
Materials	$6,140
Labor	432
Overhead	875
Total	$7,447
Building Block Molds (each)	
Materials	$226
Labor	27
Overhead	34
Total	$287

Note to the Statements of Cash Flows

The statements of cash flow includes $26,000 of capital improvements to be financed through the $200,000 of new proceeds expected to be generated as a result of this prospectus.

Electrical	$12,000
Plumbing and Bathroom Fixtures	1,900
Furniture	3,000
Telephones	2,100
Fax Machine, Computer and Software	5,850
Trade Show Exhibit	2,100
Total	$26,900

Remaining monthly operating expenses conservatively reflect typical costs of doing business and the necessity to have an adequate budget for insurance, telecommunications, professional advice (legal, accounting) and advertising .

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EARTH BOUND TIRE RECLAMATION
COMPANY

STATEMENTS OF CASH FLOWS - YEAR 1

	START UP	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12	TOTAL YEAR 1
BEGINNING BALANCE	$ -	$ 173,100	$ 116,766	$ 107,431	$ 96,093	$ 64,166	$ 97,832	$ 130,495	$ 154,569	$ 188,234	$ 220,897	$ 243,971	$ 276,636	$ -
CASH FLOW FROM OPERATIONS														
Compaction Unit Sales	$ -	$ -	$ 35,000	$ 35,000	$ 35,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 70,000	$ 665,000
Mold Sales	$ -	$ -	$ 20,000	$ 20,000	$ 20,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 380,000
License Fees	$ -	$ -	$ 1,000	$ 1,000	$ 1,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 19,000
Stock and Loans	$ 200,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 200,000
NET CASH FROM OPERATIONS	$ 200,000	$ -	$ 56,000	$ 56,000	$ 56,000	$ 112,000	$ 112,000	$ 112,000	$ 112,000	$ 112,000	$ 112,000	$ 112,000	$ 112,000	$ 1,264,000
TOTAL CASH AVAILABLE	$ 200,000	$ 173,100	$ 172,766	$ 163,431	$ 152,093	$ 176,166	$ 209,832	$ 242,495	$ 266,569	$ 300,234	$ 332,897	$ 355,971	$ 388,636	$ 1,264,000
CASH PAID OUT														
Materials and Overhead	$ -	$ 9,000	$ 18,000	$ 18,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 27,000	$ 36,000	$ 297,000
Salaries and Wages	$ -	$ 27,515	$ 27,515	$ 27,515	$ 37,107	$ 27,515	$ 27,515	$ 37,107	$ 27,515	$ 27,515	$ 37,107	$ 27,515	$ 27,515	$ 358,956
Legal Services	$ -	$ 1,666	$ 1,666	$ 1,668	$ 1,666	$ 1,666	$ 1,668	$ 1,666	$ 1,666	$ 1,668	$ 1,666	$ 1,666	$ 1,668	$ 20,000
Supplies	$ -	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 172	$ 2,064
Accounting Services	$ -	$ 333	$ 333	$ 334	$ 333	$ 333	$ 334	$ 333	$ 333	$ 334	$ 333	$ 333	$ 334	$ 4,000
Advertising	$ -	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 1,500	$ 18,000
Trade Shows	$ -	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 1,250	$ 15,000
Travel	$ -	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 36,000
Rent	$ -	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 1,800	$ 21,600
Commisions	$ -	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 332	$ 3,984
Insurance	$ -	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 2,000	$ 24,000
Utilities	$ -	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 1,220	$ 14,640
Interest	$ -	$ 1,000	$ 994	$ 988	$ 982	$ 975	$ 969	$ 963	$ 957	$ 950	$ 944	$ 938	$ 931	$ 11,591
Real Estate Taxes/loans	$ -	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 2,896	$ 34,752
Leases	$ -	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 5,160
Subtotal	$ -	$ 55,114	$ 64,108	$ 64,105	$ 82,688	$ 73,089	$ 73,086	$ 80,669	$ 71,071	$ 71,067	$ 80,650	$ 71,052	$ 80,048	$ 866,747
Loan Principle	$ -	$ 1,220	$ 1,227	$ 1,233	$ 1,239	$ 1,245	$ 1,251	$ 1,257	$ 1,264	$ 1,270	$ 1,276	$ 1,283	$ 1,289	$ 15,054
Capital Purchase	$ 9,900	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,900
Capital Improvements	$ 17,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 17,000
Reserves	$ -	$ -	$ -	$ 2,000	$ 4,000	$ 4,000	$ 5,000	$ 6,000	$ 6,000	$ 7,000	$ 7,000	$ 7,000	$ 8,000	$ 56,000
Owners Draw	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CASH PAID OUT	$ 26,900	$ 56,334	$ 65,335	$ 67,338	$ 87,927	$ 78,334	$ 79,337	$ 87,926	$ 78,335	$ 79,337	$ 88,926	$ 79,335	$ 89,337	$ 964,701
ENDING CASH BALANCE	$ 173,100	$ 116,766	$ 107,431	$ 96,093	$ 64,166	$ 97,832	$ 130,495	$ 154,569	$ 188,234	$ 220,897	$ 243,971	$ 276,636	$ 299,299	$ 299,299

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EARTH BOUND TIRE RECLAMATION
COMPANY

STATEMENTS OF CASH FLOWS - YEAR 2	**MONTH 1**	**MONTH 2**	**MONTH 3**	**MONTH 4**	**MONTH 5**	**MONTH 6**	**MONTH 7**	**MONTH 8**	**MONTH 9**	**MONTH 10**	**MONTH 11**	**MONTH 12**	**TOTAL YEAR 2**
BEGINNING BALANCE	$ 299,298	$ 364,583	$ 439,698	$ 512,756	$ 577,689	$ 652,500	$ 725,256	$ 787,749	$ 849,415	$ 969,556	$ 1,077,728	$ 1,195,725	$ 299,298
CASH FLOW FROM OPERATIONS													
Compaction Unit Sales	$ 105,000	$ 105,000	$ 105,000	$ 105,000	$ 105,000	$ 105,000	$ 105,000	$ 105,000	$ 140,000	$ 140,000	$ 140,000	$ 140,000	$ 1,400,000
Mold Sales	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 60,000	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 800,000
License Fees	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 3,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 40,000
Stock and Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
NET CASH FROM OPERATIONS	$ 168,000	$ 168,000	$ 168,000	$ 168,000	$ 168,000	$ 168,000	$ 168,000	$ 168,000	$ 224,000	$ 224,000	$ 224,000	$ 224,000	$ 2,240,000
TOTAL CASH AVAILABLE	$ 467,298	$ 532,583	$ 607,698	$ 680,756	$ 745,689	$ 820,500	$ 893,256	$ 955,749	$ 1,073,415	$ 1,193,556	$ 1,301,728	$ 1,419,725	$ 2,539,298
CASH PAID OUT													
Materials and Overhead	$ 36,000	$ 36,000	$ 36,000	$ 36,000	$ 36,000	$ 36,000	$ 36,000	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 54,000	$ 486,000
Salaries and Wages	$ 38,483	$ 28,891	$ 28,891	$ 38,963	$ 28,891	$ 28,891	$ 38,963	$ 28,891	$ 28,891	$ 38,963	$ 28,891	$ 28,891	$ 386,500
Legal Services	$ 833	$ 833	$ 834	$ 833	$ 833	$ 834	$ 833	$ 833	$ 834	$ 833	$ 833	$ 834	$ 10,000
Supplies	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 181	$ 2,172
Accounting Services	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 350	$ 4,200
Advertising	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 1,575	$ 18,900
Trade Shows	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 1,313	$ 15,756
Travel	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 4,200	$ 50,400
Rent	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 1,890	$ 22,680
Commisions	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 349	$ 4,188
Insurance	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 2,100	$ 25,200
Utilities	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 1,281	$ 15,372
Interest	$ 925	$ 918	$ 912	$ 905	$ 899	$ 892	$ 885	$ 879	$ 872	$ 865	$ 858	$ 852	$ 10,662
Real Estate Taxes/loans	$ 2,896	$ 2,467	$ 2,467	$ 2,467	$ 2,467	$ 2,467	$ 2,467	$ 2,467	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 25,965
Leases	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 5,160
Subtotal	$ 92,806	$ 82,778	$ 82,773	$ 92,837	$ 82,759	$ 82,753	$ 92,817	$ 91,739	$ 90,716	$ 100,780	$ 90,701	$ 99,696	$ 1,083,155
Loan Principle	$ 1,296	$ 1,302	$ 1,309	$ 1,315	$ 1,322	$ 1,328	$ 1,335	$ 1,342	$ 1,348	$ 1,355	$ 1,362	$ 1,369	$ 15,983
Capital Purchase	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Capital Improvements	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reserves	$ 8,613	$ 8,805	$ 10,860	$ 8,915	$ 9,108	$ 11,163	$ 11,355	$ 13,253	$ 11,795	$ 13,693	$ 13,940	$ 14,188	$ 135,688
Owners Draw	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CASH PAID OUT	$ 102,715	$ 92,885	$ 94,942	$ 103,067	$ 93,189	$ 95,244	$ 105,507	$ 106,334	$ 103,859	$ 115,828	$ 106,003	$ 115,253	$ 1,234,826
ENDING CASH BALANCE	$ 364,583	$ 439,698	$ 512,756	$ 577,689	$ 652,500	$ 725,256	$ 787,749	$ 849,415	$ 969,556	$ 1,077,728	$ 1,195,725	$ 1,304,472	$ 1,304,472

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EARTH BOUND TIRE RECLAMATION COMPANY

STATEMENTS OF CASH FLOWS - YEAR 3

	MONTH 1	MONTH 2	MONTH 3	MONTH 4	MONTH 5	MONTH 6	MONTH 7	MONTH 8	MONTH 9	MONTH 10	MONTH 11	MONTH 12	TOTAL YEAR 3
BEGINNING BALANCE	$ 1,304,472	$ 1,400,796	$ 1,506,945	$ 1,612,803	$ 1,699,731	$ 1,852,151	$ 2,006,026	$ 2,146,617	$ 2,298,212	$ 2,449,556	$ 2,589,128	$ 2,738,138	$ 1,304,472
CASH FLOW FROM OPERATIONS													
Compaction Unit Sales	$ 140,000	$ 140,000	$ 140,000	$ 140,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 175,000	$ 1,960,000
Mold Sales	$ 80,000	$ 80,000	$ 80,000	$ 80,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 100,000	$ 1,120,000
License Fees	$ 4,000	$ 4,000	$ 4,000	$ 4,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 5,000	$ 56,000
Stock and Loans	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
NET CASH FROM OPERATIONS	$ 224,000	$ 224,000	$ 224,000	$ 224,000	$ 280,000	$ 280,000	$ 280,000	$ 280,000	$ 280,000	$ 280,000	$ 280,000	$ 280,000	$ 3,136,000
TOTAL CASH AVAILABLE	$ 1,528,472	$ 1,624,796	$ 1,730,945	$ 1,836,803	$ 1,979,731	$ 2,132,151	$ 2,286,026	$ 2,426,617	$ 2,578,212	$ 2,729,556	$ 2,869,128	$ 3,018,138	$ 4,440,472
CASH PAID OUT													
Materials and Overhead	$ 54,000	$ 54,000	$ 54,000	$ 63,000	$ 63,000	$ 63,000	$ 63,000	$ 63,000	$ 63,000	$ 63,000	$ 63,000	$ 63,000	$ 729,000
Salaries and Wages	$ 40,407	$ 30,335	$ 30,335	$ 41,724	$ 30,335	$ 30,335	$ 41,724	$ 30,335	$ 30,335	$ 41,724	$ 30,335	$ 30,335	$ 408,259
Legal Services	$ 833	$ 833	$ 876	$ 875	$ 875	$ 876	$ 875	$ 875	$ 876	$ 875	$ 875	$ 876	$ 10,420
Supplies	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 190	$ 2,280
Accounting Services	$ 367	$ 367	$ 368	$ 367	$ 367	$ 368	$ 367	$ 367	$ 368	$ 367	$ 367	$ 368	$ 4,408
Advertising	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 1,654	$ 19,848
Trade Shows	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 1,378	$ 16,536
Travel	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 4,410	$ 52,920
Rent	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 1,985	$ 23,820
Commisions	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 366	$ 4,392
Insurance	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 2,205	$ 26,460
Utilities	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 1,345	$ 16,140
Interest	$ 845	$ 838	$ 831	$ 824	$ 817	$ 810	$ 803	$ 796	$ 789	$ 782	$ 774	$ 767	$ 9,676
Real Estate Taxes/loans	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 1,450	$ 17,400
Leases	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 430	$ 5,160
Subtotal	$ 111,865	$ 101,786	$ 101,823	$ 122,203	$ 110,807	$ 110,802	$ 122,182	$ 110,786	$ 110,781	$ 122,161	$ 110,764	$ 110,759	$ 1,346,719
Loan Principle	$ 1,376	$ 1,382	$ 1,389	$ 1,396	$ 1,403	$ 1,410	$ 1,417	$ 1,424	$ 1,432	$ 1,439	$ 1,446	$ 1,453	$ 16,967
Capital Purchase	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Capital Improvements	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reserves	$ 14,435	$ 14,683	$ 14,930	$ 13,473	$ 15,370	$ 13,913	$ 15,810	$ 16,195	$ 16,443	$ 16,828	$ 18,780	$ 21,220	$ 192,080
Owners Draw	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
CASH PAID OUT	$ 127,676	$ 117,851	$ 118,142	$ 137,072	$ 127,580	$ 126,125	$ 139,409	$ 128,405	$ 128,656	$ 140,428	$ 130,990	$ 133,432	$ 1,555,766
ENDING CASH BALANCE	$ 1,400,796	$ 1,506,945	$ 1,612,803	$ 1,699,731	$ 1,852,151	$ 2,006,026	$ 2,146,617	$ 2,298,212	$ 2,449,556	$ 2,589,128	$ 2,738,138	$ 2,884,706	$ 2,884,706

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EARTH BOUND TIRE RECLAMATION COMPANY

BALANCE SHEET	END OF YEAR 1	END OF YEAR 2	END OF YEAR 3
ASSETS			
CURRENT ASSETS			
Cash	$ 299,298	$ 1,046,675	$ 2,434,564
Accounts Receivable	$ -	$ -	$ -
Inventory	$ 92,751	$ 175,525	$ 277,777
Other Current Assets	$ 56,000	$ 191,688	$ 383,768
TOTAL CURRENT ASSETS	$ 448,049	$ 1,413,888	$ 3,096,109
FIXED ASSETS			
Land	$ -	$ -	$ -
Building	$ 21,600	$ 21,600	$ 21,600
Equipment	$ 89,985	$ 89,985	$ 89,985
Vehicles	$ 8,000	$ 8,000	$ 8,000
TOTAL FIXED ASSETS	$ 119,585	$ 119,585	$ 119,585
LESS: Accumulated Depreciation	$ 29,954	$ 45,770	$ 61,586
TOTAL NET ASSETS	$ 537,680	$ 1,487,703	$ 3,154,108
LIABILITIES			
CURRENT LIABILITIES			
Accounts Payable	$ -	$ -	$ -
Payroll	$ 9,592	$ 14,855	$ 17,940
Current Portion of Debt	$ 15,983	$ 16,969	$ 18,015
TOTAL CURRENT LIABILITIES	$ 25,575	$ 31,824	$ 35,955
LONG-TERM DEBT	$ 306,364	$ 290,381	$ 273,412
LESS: CURRENT PORTION	$ 15,983	$ 16,969	$ 18,015
TOTAL LONG-TERM LIABILITIES	$ 290,381	$ 273,412	$ 255,397
TOTAL LIABILITIES	$ 315,956	$ 305,236	$ 291,352
STOCKHOLDER'S EQUITY	$ 331,939	$ 1,809,906	$ 4,094,581
LIABILITES & STOCKHOLDERS' EQUITY	$ 299,656	$ 1,165,725	$ 2,880,359

THIS DOCUMENT IS STRICTLY CONFIDENTIAL AND PROPRIETARY. IT IS BE USED SOLELY IN THE EVALUATION OF EARTH BOUND TIRE RECLAMATION COMPANY

EARTH BOUND TIRE RECLAMATION COMPANY

STATEMENTS OF CASH FLOWS

	START UP	YEAR 1	YEAR 2	YEAR 3
BEGINNING BALANCE	$	$ -	$ 299,298	$ 1,304,472
CASH FLOW FROM OPERATIONS				
Compaction Unit Sales	$ -	$ 665,000	$ 1,400,000	$ 1,960,000
Mold Sales	$ -	$ 380,000	$ 800,000	$ 1,120,000
License Fees	$ -	$ 19,000	$ 40,000	$ 56,000
Stock and Loans	$ 200,000	$ 200,000	$ -	$ -
NET CASH FLOW FROM OPERATIONS	$ 200,000	$ 1,264,000	$ 2,240,000	$ 3,136,000
TOTAL CASH AVAILABLE	$ 200,000	$ 1,264,000	$ 2,539,298	$ 4,440,472
CASH PAID OUT				
Materials and Overhead	$ -	$ 297,000	$ 486,000	$ 729,000
Salaries and Wages	$ -	$ 358,956	$ 386,500	$ 408,259
Legal Services	$ -	$ 20,000	$ 10,000	$ 10,420
Supplies	$ -	$ 2,064	$ 2,172	$ 2,280
Accounting Services	$ -	$ 4,000	$ 4,200	$ 4,408
Advertising	$ -	$ 18,000	$ 18,900	$ 19,848
Trade Shows	$ -	$ 15,000	$ 15,756	$ 16,536
Travel	$ -	$ 36,000	$ 50,400	$ 52,920
Rent	$ -	$ 21,600	$ 22,680	$ 23,820
Commisions	$ -	$ 3,984	$ 4,188	$ 4,392
Insurance	$ -	$ 24,000	$ 25,200	$ 26,460
Utilities	$ -	$ 14,640	$ 15,372	$ 16,140
Interest	$ -	$ 11,591	$ 10,662	$ 9,676
Real Estate Taxes	$ -	$ 34,752	$ 25,965	$ 17,400
Leases	$ -	$ 5,160	$ 5,160	$ 5,160
Subtotal	$ -	$ 866,747	$ 1,083,155	$ 1,346,719
Loan Principle	$ -	$ 15,054	$ 15,983	$ 16,967
Capital Purchase	$ 9,900	$ 9,900	$ -	$ -
Capital Improvements	$ 17,000	$ 17,001	$ -	$ -
Reserves	$ -	$ 56,000	$ 135,688	$ 192,080
Owners Draw	$ -	$ -	$ -	$ -
CASH PAID OUT	$ 26,900	$ 964,702	$ 1,234,826	$ 1,555,766
ENDING CASH BALANCE	$ 173,100	$ 299,298	$ 1,304,472	$ 2,884,706

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US EPA ARCHIVE DOCUMENT

EARTH BOUND TIRE RECLAMATION COMPANY

STATEMENTS OF CASH FLOWS

	START UP	YEAR 1	YEAR 2	YEAR 3
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CASH FLOW FROM OPERATIONS				
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NET CASH FLOW FROM OPERATIONS	$ 200,000	$ 1,264,000	$ 2,240,000	$ 3,136,000
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Owners Draw	$ -	$ -	$ -	$ -
CASH PAID OUT	$ 26,900	$ 964,702	$ 1,234,826	$ 1,555,766
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Section 3: The Resource Directory

This Section contains resources for researching and writing your business plan—not all the available resources, but a good start. The directory covers all three feedstocks. You may also find helpful information from a source not exclusively related to your feed stock.

General Reference Materials 181
These are standard business resources that will assist you as you write your plan and in the day to day operations of your business. Most are readably available at your local public, college, or university library. Some are also available on-line, and they include their Internet or World Wide Web address. **The materials are organized to correspond to the sections of you business plan.**

Recycling Reference Materials 185
These are directories, lists, and other written information about companies currently in the recycling industry. Often these resources provide good contacts for sources of supply, sales outlets, and general information.

Human Resources and Trade Associations & Institutes 191
These are people and organizations to help you find information and/or develop your business plan. **It is a good idea to see what type of assistance is available as you start developing your plan.** A few phone-calls can identify significant help available at low or no cost. Also included is a listing of major trade associations for the recycling industry. Trade associations can provide a wealth of assistance from informative publications to contacts in your particular area.

Newsletters and Periodicals 200
Some pertain exclusively to plastics, glass or rubber. Many provide information on recycling in general and on small business.

Financial Resources and Programs 204
This list contains those targeted toward small business and/or recyclers. Once you have started your plan and understand your potential financing requirements, you should review this section. After studying this section, contact local bankers to apprise them of your situation and seek their input regarding what they need to see in your plan to consider you a good candidate for financing.

US EPA ARCHIVE DOCUMENT

General Business Reference Materials

Business Periodicals Index

Publisher:
H.W. Wilson Company
950 University Ave.
Bronx, NY 10452
(718)588-8400
http://www.hwwilson.com/

Type of information available:
Index of articles appearing in general business and trade periodicals, organized alphabetically by subject.

How to use it:
Obtain information on

- general industry trends
- news
- competitive information
- advances in technology

Business-to-Business Directory

Publisher:
Your local telephone company

Type of information available:
A listing of businesses in your local area that sell goods and services principally to other businesses.

How to use it:
Obtain information on:

- potential suppliers, customers, and competitors

County Business Patterns

Publisher:
U.S. Department of Commerce
Bureau of the Census
Data Use Services Div.
Washington, DC 20233
(301)457-4100
http://www.lib.virginia.edu/socsci/cbp/cbp.html

Type of information available:
State and county employment, payroll figures and numbers of establishments of various industries according to size. This resource is similar in content to the Census of the Service Industries, however County Business Patterns breaks down the total number of establishments by number of employees, but does not contain information on form of organization.

How to use it:
Obtain information on

- how many businesses in a particular industry are located in a county
- estimates of market size
- supply and demand potential

Encyclopedia of Associations

Publisher:
Gale Research, Inc.
835 Penobscot Bldg.
Detroit, MI 48226-4094
(800)877-GALE (877-4253)
(800)762-4058 fax
http://www.gale.com

Type of information available:
Lists of trade associations and other groups.

How to use it:
Obtain information on:

- Trade Associations
- Trade associations are potentially rich sources of information for both start-ups and those already in business. Trade associations may be able to provide you with industry information, consumer demographics, publications, and listings of trade shows, as well as other information.

The Internet

Type of information available:
The Internet is a system that integrates literally millions of computers, from major university mainframes to small PCs. Virtually any information that can be found in a library can be accessed on-line through File Transfer Protocol (FTP) sites. In addition, the government maintains information —- from census bureau files, labor statistics, and law documents, to the hours the White House is available for tours —- in huge libraries located on "the 'Net." Universities maintain research documents, academic and industrial studies, course descriptions, and library card catalogs. The importance the Internet plays in the research process can not be overstated. For example, a large portion of the research for this book was done on the 'Net, and practically all of the text traveled on the information superhighway from author to editor and back again.

Marketing on the Internet has grown exponentially over the past year. Most large corporations (AT&T, Hewlett Packard, General Motors) have sites on the 'Net that not only advertise their products and services but, offer financial data about their company and may have links to other resources for information relating to their industry. Even "mom & pop" stores are joining the Information Age by having a "Web site" to advertise their business. Individuals have FTP sites that contain data for special interest groups, such as environmentalism or military reenactments.

How to use it:
The Internet can be accessed through most colleges and universities around the globe (some restrictions for usage may apply if you are not directly affiliated with the institution). In addition, you can get on to the Internet via "Internet Gateways," which are like virtual "on-ramps" to the information highway. Most on-line services such as America Online, CompuServe, and Prodigy have gateways, as do most large corporate E-mail systems. Therefore, you can use the Internet at home with your own PC.

Lifestyle Market Analyst

Publisher:
SRDS
1700 Higgins Rd.
Des Plaines, IL 60018
(800)851-SRDS (851-7737)
(847)375-5000
(847)375-5001 fax
http://srds.com

Type of information available:
Demographic information on popular activities, broken down by geographic market.
How to use it:
Obtain information on

- calculations for potential market for your product or service by cross-referencing data
- calculating the total market for a product or service

New York Times Index

Publisher:
The New York Times Company
229 W. 43rd St. (9th Fl)
New York, NY 10036-3913
(212)556-1989 (212)221-5065 for index
(212)556-1629 fax
http:/www.nytimes.com/

Type of information available:
Abstracts of articles related to your business that have appeared in the New York Times

How to use it:
Obtain information on

- articles addressing topics relating to your business or industry

Reader's Guide to Periodical Literature

Publisher:
H. W. Wilson Company
950 University Ave.
Bronx, NY 10452
(800)367-6770
(718)588-8400
http://www.hwwilson.com/
Type of information available:
Listings of recent articles appearing in more than 200 popular periodicals, indexed by subject and author in one alphabetical list. Also available in an abridged format covering more then 50 publications.

How to use it:
Obtain information on

- recent articles about your industry or service

Simmons Media and Market Report

Publisher:
Simmons Market Research Bureau Inc.
309 W. 49th St., 14th Fl.
New York, NY 10019-7316
(800)999-SMRB
(212)373-8900
(212)373-8918 fax
email: simmonsres@aol.com

Type of information available:
Extensive information about the consumers of various products. For example, for the product consumed, one can determine the age, income, educational level, race, television viewing habits, etc. of the typical consumer.

How to use it:
Obtain information on

- developing a demographic profile of your customer
- determining market share and size
- positioning advertising

US EPA ARCHIVE DOCUMENT

The Sourcebook of Zip Code Demographics

Publisher:
CACI Marketing Systems
1100 N. Glebe Rd.
Arlington, VA 22201
(800)292-CACI (2224)
(703)841-2916
(703)522-6376 fax
http://www.caci.com/ or
http://demographics.caci.com/

Type of information available:
Provides demographic information such as population, income, race, age, and purchase potential, from the national to the local level, arranged by zip code.

How to use it:
Obtain information on

- determining the demographic characteristics of inhabitants of a certain geographic area(s)

Thomas Register

Publisher:
Thomas Publishing Company
Five Penn Plaza
New York, NY 10001
(212)695-0500
(212)290-7206 fax
http://thomaspublishing.com

Type of information available:
Lists companies and the products that they produce. Information is organized by both product type and company name.

How to use it:
Obtain information on

- customers
- competitors
- suppliers

Ulrich's International Periodicals Directory

Publisher:
R. R. Bowker
121 Chanlon Rd.
New Providence, NJ 07974
(800)521-8110
(908)771-7725
http://www.reedref.com

Type of information available:
Magazines and journals listed alphabetically by field. The data include items such as subscription rates, publisher address, description of the periodical, and the ISSN number.

How to use it:
Obtain information on

- periodicals (domestic and international) that cover the area of your business

Wall Street Journal Index

Publisher:
U.M.I. Co.
PO Box 1346
Ann Arbor, MI 48106
(800)521-0600
(502)864-0019 fax

Type of information available:
Monthly digests of articles appearing in the *Wall Street Journal*. For a more definitive listing, this resource is also available on-line through many colleges and universities.

How to use it:
Obtain information on

- *Wall Street Journal* articles relating to your industry

US EPA ARCHIVE DOCUMENT

Recycling Reference Material

Annual Directory/Reference Material

Publisher:
American Recycling Market
PO Box 577
Ogdensburg, NY 13669
(315)471-0707
(800)267-0707
http:\\www.recyclingdata.com

ARM is a complete materials recycling resource. ARM can locate sections covering buyers and sellers of recyclable materials coast to coast, expand markets, look for new business and check out competition. Information includes: over 20,000 brokers, dealers, consumers, graders, packers, exporters/importers; over 25,000 cross-referenced company and agency listings; special references - annual updates on associations, agencies, waste exchanges, reports, publications, glossary of recycling terminology; data specifications - material compositions and specifications, historical pricing; detailed sections covering scrap metals, paper mills, glass, oil and textiles, equipment suppliers, scrap metal consumers, auto dismantlers, plastics and rubber; composting and wood waste; waste paper; demolition companies; recycling centers; special services and consultants.

Buy Recycled Guide Book

Publisher:
National Recycling Coalition Inc./Buy Recycled Business Alliance
1727 King St., #105
Alexandria, VA 22314
(202)625-6406

A national listing of distributors and manufacturers of recycled products and materials, including phone numbers and addresses. Industries include everything from automotive to veterinarian supplies.

Directory of Companies Manufacturing Products from Recycled Vinyl

Publisher:
Vinyl Environmental Resource Center (VERCE)
1 Cascade Plaza, 19th Floor
Akron, OH 44308-1121
(800)969-8469
Cost: Free

VERCE is a national clearinghouse for information about vinyl's environmental performance. VERCE answers questions about: the impact of vinyl products on the environment, vinyl's health and safety aspects, where and how to recycle vinyl, vinyl's fire performance properties, markets for recycled vinyl, and other options for managing post-consumer vinyl waste. This directory can be used to obtain information on potential customers for your processed vinyl.

Directory of U.S. and Canadian Companies Involved in the Recycling of Vinyl (PVC) Plastics

Publisher:
The Vinyl Institute
65 Madison Avenue
Morristown, NJ 07960
(201) 898-6699

Alphabetical listings of company's processing capabilities, the type of scrap it accepts and the form in which it accepts it. The directory has been prepared by the Vinyl Institute as a service to its members, their customers and others interested in recycling vinyl plastics.

Ecopreneuring: The Green Guide to Small Business Opportunities From the Environmental Revolution

Publisher:
John Wiley & Sons, Inc.
605 3rd Avenue
New York, NY 10158
(212)850-6000
http://www.wiley.com/

Guide showing how to take advantage of many small business opportunities now developing with environmental related products and services. This is an excellent general resource for starting an environmentally related small business.

Gale Environmental Sourcebook

Publisher:
Gale Research, Inc.
835 Penobscot Bldg.
Detroit, Mich. 48226-4094
(800)877-GALE (4253)
http://gale.com/

A reference guide including listings of U.S. and international organizations, government agencies and programs, research facilities and educational programs, publications and information services, and scholarships and awards. Obtain information on sources of funding (charities, national/international foundations), government agencies and reference materials that provide data on environmental impact, available scholarships, loans, awards, honors, and prizes. Also includes listing of endangered wildlife and plants, and EPA National Priorities.

US EPA ARCHIVE DOCUMENT

Glass Recycling Sourcebook

Publisher:
Glass Packaging Institute
1627 K St. NW, Suite 800
Washington, DC 20006
(202)887-4850
http://www.gpi.org/

A compilation of interesting glass container recycling facts and a bibliography on glass recycling sources.

Green Product Directories

Guide of Resource Efficient Building Elements

Publisher:
Center for Resourceful Building Technology
PO Box 3866
Missoula, MT 59806
(405)549-7678
http://www.montana.com/CRBT/

Excellent source of information. Guide also has national listings of recycled products, including over 400 manufacturers. $25.00 per copy.

Guide to Recycled Products for Consumers and Small Business

Publisher:
Pennsylvania Resources Council
PO Box 88
Media, PA 19063
(610)353-1555
(610)353-6257 fax

A national listing of products made from recycled materials, ranging from building materials to clothing. Also contains a listing of the companies that make the products. Cost is $3.00 for Pennsylvania residents and $4.00 for out of state residents.

Harris Directory

Publisher:
Recycled Content Building Materials
Stafford-Harris
218 Polk Street #326
Port Townsend, WA 98368
(360)379-8541

Listings including over 900 manufacturers of recycled content building materials, and 2,500 products. It is used as the authority in recycled building materials to obtain information on competitors, customers and end users. $69.00 for new subscription, $45.00 renewal.

McRecycle USA

Publisher:
McDonalds Corporation
Environmental Affairs
Kroc Drive
Oak Brook, IL 60521
(708)575-5779
http://www.mcdonalds.com/

Database listing of 560 manufacturers of foodservice materials and 1,000 foodservice products. Also includes current McDonalds' corporation vendor listing broken down with minority and small business classifications. There is no charge for single copies.

National Green Pages

Publisher:
Co-Op America
1850 Street NW Suite 700
Washington DC 20036
(202)872-5307

A book listing 1200-1400 environmental companies for individuals and businesses interested in creating a green business.

The Official Recycled Products Guide

Publisher:
American Recycling Market, Inc.
PO Box 577
Odgensburg, NY
(800)267-0707

Information includes over 800 manufacturers of recycled content products and 4,500 products. It is a recognized authority in recycled products. Cost is $49.00 to $275.00 dependent on subscription. There is also a newsletter available as well as hotline assistance to locate recycled products. Resource can be utilized to obtain information on competitors, customers, industry trends, and available resources.

Recycler's World

PO Box 24017
Guelph, Ontario, Canada N1E 6V8
(519)767-2913
http://www.recycle.net/

Recycler's World was established as a world wide trading site for information related to secondary or recyclable commodities, by-products, used & surplus items or materials. Information available through Recycler's World includes: Recycling Associations, Publications, Information & Materials Exchanges, Traders and

Recyclers, Waste & Recycling Equipment, Internet Services Information, ON-LINE Market Prices, Grades & Specifications, Brokerage Group Services, RecycleNet (Agent Opportunities), Recycling Investment Opportunities, The Creator of Recycler's World, and other Recycling Sites on the Internet.

Visit the web site for the following menu items:

Automotive Recycling; Battery Recycling; Computer Recycling; Iron & Steel Recycling; Non-Ferrous Metal Recycling; Precious Metals Recycling; Exotic Metals Recycling; Tire & Rubber Recycling; Plastics Recycling; Paper Recycling; Wood Recycling; Textile & Leather Recycling; Glass & Fiberglass Recycling; Mineral Recycling; Liquids, Oils & Chemicals Recycling; Composting & Food Waste Recycling; Multi-Material Recycling; Waste Collection & Disposal; Used Building Materials, Used Equipment; Used Commercial Items; Used Consumer Items; and Collectible Items.

Recycled Products Guide

Publisher:
US General Services Administration
GSA Schedule Information Center
Washington, DC 20406
(703)305-6477

Most recent publication date is April 1994. Order document RCPG-0001. There is no charge for single copies.

Recycled Rubber Products Catalog

Publisher:
Scrap Tire Management Council
1400 K St. NW, Suite 900
Washington, DC 20005
(202)682-4880

A source book of materials manufactured from recycled tire and other rubber. The purpose of the Recycled Rubber Catalog is to help make the buying public aware of a range of products that are manufactured with a recycled rubber content. Other publications of the Recycling Research Institute include:

Scrap Tire Users Directory
Contains information on processors/suppliers, recycled rubber manufacturers, tire industry suppliers, equipment dealers, markets, and government agencies.
Tire Recycling is Fun
Contains information on projects for used tires.
State Scrap Tire Management Programs
Guide to state scrap tire laws.

Recycling Market Profile: Glass Containers

Publisher:
Resource Recycling
PO Box 10540
Portland, OR 97296-0540
(503)227-1319

A detailed comprehensive assessment of the past, present, and future markets for bottles and jars. Extensive data on supply, demand, and pricing of cullet.

Recycling Sourcebook

Publisher:
Gale Research, Inc.
835 Penobscot Bldg.
Detroit, Mich. 48226-4094
(800)877-GALE (4253)
http://www.gale.com/
Essays on current trends, practices and funding sources for: recycled paper, aluminum, plastics recycling, packaging, glass recycling, composting systems, steel cans, and more. Success stories of community recycling programs as well as listings of recycling organizations, agencies, and publications .

Similar to Small Business Profiles, this reference is an excellent source for ideas and information. A considerable amount of statistical data is available to identify and/or support the need for your particular recycling business. If you intend to open a recycled plastic diaper business for example, this resource will provide sources of funding, challenges you might face, and ways of overcoming them.

US EPA ARCHIVE DOCUMENT

Recycled Product Directory

Publisher:
Clean Washington Center
2001 Sixth Avenue Suite 700
Seattle, Washington 98121
(206)464-7040

Contains a listing of over 400 recycled content products ranging from office supplies to automotive parts.

Recycled Content Building and Construction Products

Publisher:
Clean Washington Center
2001 Sixth Avenue Suite 700
Seattle, Washington 98121
(206)464-7040
http://www.cws.org/

Contains nearly 500 construction and building products, classified according to Construction Specification Institute's master format system.

Resources for Recycling and Waste Management Entrepreneurs

Publisher:
Resource Recycling
PO Box 10540
Portland, OR 97210-0540
(503)227-1319
email: RESRECYCLE@aol.com

Directory of U.S. & Canadian Scrap Plastics Processors & Buyers

A listing of nearly 375 North American firms that purchase plastics scrap - including buyers of plastic containers, film, sheet and mixed thermoplastics. This resource will help you assess market opportunities in the fastest-growing sector of the recycling industry. Detailed information is provided for each company: grades of scrap purchased; form desired; preferred supply sources; desired shipping methods; and company contact information. The book also includes an extensive directory of plastics recycling equipment manufacturers. $40.00 per annual issue.

Directory of Key Recycling Contacts

This guide provides 60 pages of contact information for all the key players in recycling. Over 700 listings for: state and federal recycling officials; recycling market development programs; state and provincial recycling associations; university recycling institutes; congressional leaders in recycling; national trade associations; waste exchanges; and many more categories. $19.95 per annual issue.

The Recycler's Lexicon: A Glossary of Contemporary Terms and Acronyms

A general glossary of common terms, this guide provides practical and concise definitions for over 400 contemporary recycling and composting terms and acronyms. The glossary focuses on the words and phrases, from technical to generic, used by those involved with post-consumer recycling and composting. $9.95.

Directory of U.S. & Canadian Scrap Computer Processors

This directory lists processors of scrap computers in the U.S. and Canada. These firms commonly reclaim metals and plastics used in many types of electronic goods. Two lists are provided: a geographical listing of firms by province and state, followed by an alphabetical listing of the firms. $4.95.

Directory of U.S. & Canadian Plastic Lumber Producers

Nearly five dozen plastic lumber producers are listed in this directory. Two lists are provided. The first provides a geographical listing of firms by state and province. The second section is an alphabetical listing of lumber producers and, for many firms, a listing of the products they produce. $4.95.

Recycling Market Profile: Glass Containers

A detailed, comprehensive assessment of the past, present and future markets for bottles and jars. Extensive data on supply, demand and pricing of cullet. All known buyers of cullet in the U.S. $19.95. Back issues available.

The Directory of U.S. and Canadian Buyers of Scrap Cans and Bottles

This directory provides all the necessary information for collectors and processors of cans and bottles. Extensive details are provided for every U.S. and Canadian firm that buys glass and metal packaging. The directory is indexed by state and province, thus allowing the user to locate local markets. $24.95.

The Directory of On-line Resources in Recycling and Composting

This comprehensive directory features World Wide Web pages; bulletin board systems in solid waste management; E-mail addresses for hundreds of recycling, composting and solid waste resources; database and government resources; and mailing lists. $12.95.

State Recycling Laws Update

Publisher:
Raymond Communications Inc.
6429 Auburn Avenue
Riverdale, MD 20737-1614
(301)345-4237
(301)345-4768 fax
http://www.raymond.com/recycle/

Bi-monthly newsletter and yearly 140-page reference report on North American recycling laws and legislation. Covers 32 issues, including recycled content mandates, deposits, landfill bans, commercial mandates, flow control, tax credits, purchasing preferences. Each issue has a state bill summary, free E-mail service in between issues. Year-End Edition covers all issues, summarizes 500 laws, including Canadian policies, gives political outlook by state, indexed, 12 tables of laws, free wall charts.

US EPA ARCHIVE DOCUMENT

Human Resources
(Trade Associations & Institutes)

The Clean Washington Center

999 3rd Avenue, Suite 1080
Seattle, WA 98104
(206)464-6282
(206)464-5868 fax
http://www.cwc.org/

The Clean Washington Center was established to facilitate the development of viable, sustainable markets for recycled materials as an alternative to disposal. Without stable markets for the materials collected, the local investment made in collection systems cannot be sustained. A Glass Markets Information Systems has been developed by the Clean Washington Center as an aid for interested parties to identify some potential used for post-consumer glass. The system records technical and economic information on existing and potential uses for recovered glass in an applications database.

Council on Packaging in the Environment

1255 23rd St. N.W.
Washington DC 20037
(202)331-0099

COPE is a national coalition of consumer product companies, packaging producers, material suppliers, retailers, trade associations and recyclers formed to help resolve environmental packaging concerns.

Kirkworks

PO Box 15062
Durham, NC 27704-0062
(919)220-8065
(919)220-9720
http://www.kirkworks.com/

Kirkworks is an economic development firm based in Durham, Norh Carolina. The firm provides services and develops initiatives to foster successful entrepreneurship in the recycling and environmental industries.

National Recycling Coalition (NRC)

1727 King Street, Suite 105
Alexandria, Virginia 22314-2720
(703)683-9025
(703)683-9026 fax
http://www.earthsystems.org/aboutnrc.html

The NRC seeks to advance source reduction, reuse, and complementary strategies. NCR's mission is accomplished by providing national leadership and coordination to create consensus on recycling issues; increasing awareness of and support for recycling; providing recycling education and information; promoting increased collection and processing of recyclable materials, developing markets for recovered materials and recycled content products.

NCR's 3,700 members include for-profit and non-profit recycling organizations, environmental organizations, large and small businesses, federal, state and local governments, and individuals. NRC membership gives individuals and organizations access to a network of representatives from all facets of recycling, as well as publications covering the latest issues, technologies, recycled materials, market development and recycled-content products.

Service Corps of Retired Executives (SCORE)

http://www.score.org/

SCORE, is an organization sponsored by the US Small Business Administration. It is a nonprofit association with over 13,000 retired (and active) business executives who provide free counseling on a wide variety of small business topics. They assist in the analysis and definitions of your problems, and help you find solutions based on their experiences with similar situations. There is no limit on the length of time you may utilize SCORE resources. All information about your business is kept strictly confidential, and is not released to anyone outside of SCORE. In addition, SCORE also conducts seminars and workshops focused on small business needs.

SCORE has 400 chapters with counselors in all 50 states, Puerto Rico, Guam, the Virgin Islands, and the District of Columbia. Contact the SBA at 1-(800)827-5722 or the National SCORE Office at (202)653-6279 to locate the SCORE office nearest you.

US EPA ARCHIVE DOCUMENT

The Environmental Council of the States

444 North Capitol St., NW
Suite 305
Washington, DC 20001
(202)624-3660
(202)624-3666 fax
email: eco@sso.org
http://sso.org/ecos/ecosweb.htm

The Environmental Council of the States (ECOS) is the non-profit, non-partisan organization representing environmental commissioners in the states, territories and the District of Columbia. The mission of ECOS is to improve the environment of the United States by providing for the exchange of ideas, views and experiences among the states, fostering cooperation and coordination in environmental management, and articulating state positions to Congress and EPA on environmental issues.

Environmental Protection Agency Regional Offices

The EPA can provide a vast array of information for the recycler. Before you begin operations, you must check with your regional EPA office to ensure proper compliance with environmental laws and statutes. Following is a list of each Regional office, the states under its jurisdiction, and contact numbers.

Region 1
(Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)
John F. Kennedy Federal Building
One Congress Street
Boston, MA 02203
(617)565-3420

Region 2
(New York, New Jersey, Puerto Rico, Virgin Islands)
Jacob K. Javitz Federal Building
26 Federal Plaza
New York, NY 10278
(212)264-2657

Region 3
(Pennsylvania, Maryland, W. Virginia, Virginia, Washington DC, Delaware)
841 Chestnut Building
Philadelphia, PA 19107
(215)597-9800

Region 4
(Kentucky, Tennessee, N. Carolina, S. Carolina, Mississippi, Alabama, Georgia, Florida)
345 Courtland Street NE
Atlanta, GA 30365
(404)347-4724

Region 5
(Wisconsin, Michigan, Minnesota, Ohio, Illinois, Indiana)
77 West Jackson Blvd.
Chicago, IL 60604-3507
(312)353-2000

Region 6
(New Mexico, Texas, Oklahoma, Arkansas, Louisiana)
First Interstate Bank Tower
at Fountain Place
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733
(214)655-6444

Region 7
(Nebraska, Iowa, Kansas, Missouri)
726 Minnesota Avenue
Kansas City, KS 66101
(913)551-7000

Region 8
(Montana, Wyoming, Utah, Colorado, N. Dakota, S. Dakota)
999 18th Street, Suite 500
Denver, CO 80202-2466
(303)293-1603

Region 9
(California, Nevada, Arizona, Hawaii, American Samoa, Guam)
75 Hawthorne Street
San Francisco, CA 94105
(415)744-1305

Region 10
(Washington, Oregon, Idaho, Alaska)
1200 Sixth Avenue
Seattle, WA 98101
(206)553-4973

Association of Small Business Development Centers (ASBDC)

A Small Business Development Center (SBDC) counsels, conducts research, and trains business people in a wide variety of business topics and provides comprehensive information services and access to experts in many fields. Each SBDC encourages unique local efforts, region to region, state to state, and community to community, to meet small business needs in its area. SBDCs develop and maintain partnerships among community organizations and local, state, and federal agencies, providing a focal point for broad networks of public and private resources at the community level. SBDC partnership programs and activities serving small businesses have contributed significantly to economic growth in each state.

For the location of the SBDCs in your state, contact:
Association of Small Business Development Centers (ASBDC).
3108 Columbia Pike, Ste. 300
Arlington, VA 22204
(703)27-8700
(703)27-8701 fax

State Economic Development Agencies

Every state has some form of economic development agency which provides services ranging from management assistance to financing. The types of services provided will vary from state to state. As you develop your business plan, it is important to contact your state economic development agency to determine what types of help may be available. Many states offer investment tax credits, incentive programs, and recycling grant and loan programs. Contact your state government office to obtain the agency name, address and phone number.

US EPA ARCHIVE DOCUMENT

American Plastics Council (APC)
1275 K Street, NW, Suite 400
Washington, DC 20005
(800)243-5790
http://www2.plasticsresource.com/

The APC is publishing *Shop Recycled! A Consumer's Guide to Recycled Plastics*. The products listed in this guide are just a sampling of the many quality items now made with recycled plastics. A user can obtain information on ideas for manufacturing and processing post-consumer plastic products, discovering current markets for plastic products, and evaluating competitor offerings.

Alliance of Foam Packaging Recyclers
2124 Priest Bridge Dr.
Crofton, MD 21114
(410)451-8340
(410)451-8343 fax
http://www.presstar.com/afpr/

AFRP's members, including manufacturers of EPS foam, their raw material suppliers and other companies, work to ensure that post-consumer foam packaging is recovered and recycled.

Appliance Recycling Information Centre
701 Pennsylvania Ave, NW, Suite 900
Washington, DC 20004
(202)434-7492
(202)434-7400 fax
http://www.appliance-recycler.com/

The ARIC aims to be the authoritative source of information on the environmentally responsible disposal and recycling of appliances and to improve the recycling rate for appliances.

Asphalt Recycling & Reclaiming Association
3 Church Circle, Suite 250
Annapolis, MD 21401
(410)267-0023
(410)267-7546 fax
http://rampages.onramp.net/~prime/arra/htm

The association's mission is to advance and improve the asphalt recycling and reclaiming industry, technology, applications, and equipment.

Association of Foam Packaging Recyclers (AFPR)
1275 K Street NW
Room 800
Washington, DC 20005
(800)944-8448
http://www.sojourn.com/~ibgross1/plastics_afpr.html

AFPR members share the concerns of their customers and the public about solid waste and the conservation of natural resources.

Association of Postconsumer Plastic Recyclers
1275 K Street N.W., #501
Washington, DC 20005
(202)371-5336
(202)371-0616 fax

In order to maintain and expand the growth of plastic recycling, concerted efforts must be targeted at expanding the markets for postconsumer plastics through educational and legislative means, at establishing good definitions for post consumer plastics, at demanding that certain products be designed for recyclability, and at supporting Buy Recycled campaigns throughout North America.

Objectives of the association include: functioning as the chief spokesperson for the plastics recycling industry in the commercial sector, the legislative arena, the statistical data generation field and the area of technical information; positioning itself as a single, meaningful voice dedicated to enhancing the economic viability of postconsumer plastic recycling; existing as a group of members with assets dedicated to the processing of postconsumer plastics; striving to expand the postconsumer plastic recycling industry through a cooperative effort by identifying and eliminating barriers to successful commercial recycling.

Goals include: the design of packaging for greater recyclability; improving the quality of postconsumer plastics entering the system; and fostering a strong interface with end user markets for postconsumer plastic recycled materials.

Chicago Board of Trade Recyclables Exchange

141 W. Jackson
Chicago, IL 60604-2994
(312)341-7955
http://www.cbot.com/

The Chicago Board of Trade (CBOT) Recyclables Exchange is a centralized exchange for recovered materials such as glass, PET and HDPE plastic, and paper. Other recyclable materials can be broadcast through the system's miscellaneous screen. Participants can use the on-line electronic bulletin board to post listings to buy or sell recyclable materials. Information on material type, quantity, quality, price and other relevant data will be included. Buyers and sellers will contact each other individually.

Anyone with a PC, modem and communication software can access the Recyclables Exchange as a guest with limited access. The telephone number for access is (312)986-9780. If you have questions about navigating through the system call the CBOT Electronic Trading Control Center at (312)347-7955. For more information about the exchange or becoming a subscriber, please contact a Recyclables Product Manager at (312)341-7955.

Container & Packaging Recycling Institute

1400 16th Street, NW Suite 250
Washington, DC 20036
(202)797-6839
http://www.igc.apc.org/

CRI is a non-profit research and public education organization. CRI researches container and packaging reduction, reuse and recycling options, and serves as a clearinghouse for information on existing and proposed deposit programs in the U.S., Canada and Europe.

The Environmental Industry Associations (EIA)

4301 Connecticut Ave., N.W. Ste.300
Washington, DC 20008
(202)244-4700
(202)966-4818 fax
http://www.envasns.org/

EIA provides information on recycling rates, costs/benefits, market trends, and success stories; landfill locations, standards, operations, safety/environmental protection, methane, fees and capacity; solid medical, and hazardous waste generation, management methods, interstate movement, and flow control; public and private partnerships; trucks and other equipment and safety practices for equipment use; and international waste management trends and issues.

Foodservice and Packaging Institute (FPI)

1550 Wilson Blvd. #701
Arlington, VA 22209
(703)527-7505
(703)527-7512 fax
http://www.fpi.org/

FPI is the material-neutral trade association for manufactures, raw material suppliers, machinery suppliers and distributors of foodservice disposable products, as well as others associated with the industry. FPI's mission is to promote the sanitary, safety, functional, economic and environmental benefits of foodservice disposable.

Glass Packaging Institute

Natalie Roy
1627 K Street, NW, Suite 800
Washington, DC 20006
(202)887-4850
(202)785-5377 fax
http://www.gpi.org/

The GPI provides advocacy, marketing, recycling, and education services to the glass container industry. GPI and its members have been at the forefront of efforts to establish comprehensive curbside recycling programs in communities across the country.

Institute of Packaging Professionals (IPP)

481 Carlisle Drive
Herndon, VA 20170-4830 USA
(703)318-8970

The IPP provides education and learning on advancing the state of the art packaging, cooperative problem solving, continual information such as newsletters, and recognizing packaging professionalism. In order to join IPP there are annual dues of $125.

US EPA ARCHIVE DOCUMENT

Institute of Scrap Recycling Industries, Inc.

1325 G. St. NW, Suite. 1000
Washington, DC 20005-3014
(202)737-1770
(202)626-0900 fax
http://www.isri.org/

ISRI is the North American trade association of the scrap processing and recycling industry. It represents 1,600 companies that process, broker, and consume scrap commodities, including metals, paper, plastics, glass, rubber, and textiles. Suppliers of equipment and services to this industry complete IRSI's membership. A primary association objective is to bring about a greater awareness of the industry's role in conserving the future through recycling and in increasing recycling by promoting Design for Recyling.

International Tire and Rubber Association Tire and Rubber Recycling Advisory Council

PO Box 37203
Louisville, KY 40233-7203
(502)968-8900
(502)964-7829 fax
(800)426-8835

ITRA is dedicated to providing its members the services necessary to enhance their success as a vital and integral part of the tire, transportation, and recycling industries. ITRA established the Tire and Rubber Recycling Advisory Council to assist in this endeavor. Services provided include:

- Training and management programs;
- Technical data and research;
- Market development; and
- Government relations.

National Association for Plastic Container Recyclers (NAPCOR)

Luke B. Schmidt
100 N. Tryon Street, Suite 3770
Charlotte, NC 28202
(704)358-8882
(704)358-8769 fax

NAPCOR deals with polyethylene terephthalate (PET), a strong, lightweight, shatter resistant form of polyester used to make containers for food and other products. NAPCOR works with communities and organizations across the country, lending technical expertise, market development assistance, educational materials and communications support in an effort to increase PET recycling.

National Solid Waste Management Association (NSWMA)

4301 Connecticut Ave.
NW Suite 300
Washington, DC 20008
(202)244-4700
(202)966-4841 fax
(800)424-2869
http://www.envasns.org/nswma/

NSWMA is dedicated to promoting the economical and environmentally safe disposal of solid waste and to nurturing a strong business climate for the industry.

National Tire Dealers & Retreaders Association

1250 I St. NW, Suite 400
Washington, DC 20005
(202)789-2300
(202)682-3999 fax
http://www.recycle.net/recycle/Associations/rs000149.html

National association providing leadership and service for independent tire dealers and retreaders.

North American Recycled Rubber Association

160 Baseline Road
Bowmanville, Ontario, Canada L1C 1A2
(905)623-8919
(905)623-1791
http://www.recycle.net/recycle/Associations/rs000156/html

The NARRA was created in August 1994 to bring together the various stakeholders affiliated with the recycled rubber industry, including: haulers, processors, manufacturers, distributors, dealers, government representatives, consultants, and members of other Associations or Councils.

Northeast Resource Recovery Association

PO Box 721
Concord, NH 03302-0721
(603)224-6996
(603)226-4466 fax
NRRA is a coalition of municipalities, businesses, and individuals working together to promote environmentally sound waste management and recycling practices.

Plastics Institute of America
277 Fairfield Road, Suite 100
Hoboken, NJ 07004
(508)934-3130

PIA is a not-for-profit educational and research group dedicated to education and research for the plastics industries. Corporate members of the PIA include large and small producers of plastic products, commodity and engineering resins, additives for plastics, plastics packaging and process machinery as well as educators, international industry associations, and trade publications.

Plastic Lumber Trade Association
540 South Main Street, Building 7
Akron, OH 44311-1023
(800)886-8990
(330)762-8989
(330)762-1613 fax

The plastic lumber industry involves utilizing high and low density polyethylene, regrinding, melting down, extruding and forming to different sizes of lumber.

Rubber Manufacturers Association (RMA)
1400 K Street, NW, Suite 900
Washington DC 20005
(202)682-4800
(202)682-4854 fax
http://www.rma.org/

The Rubber Manufacturers Association is the primary national trade association for the finished rubber products industry in the United States. RMA is the leading business advocate, resource and information clearinghouse for and about today's diversified rubber industry. Services provided include:

- Economics, trade and market analysis data;
- Education programs;
- Product specifications and standards;
- Environmental issues; and
- Technical support.

RMA established the Scrap Tire Management council to develop economically sound methods of scrap tire reuse, recycling and recovery.

Rubber Pavements Association
4500 South Lakeshore Drive, Suite 359
Tempe, AZ 85282
(602)755-1269
(602)755-1270 fax

RPA works to share information among countries, states, local governments and members of the paving institutes concerning the cost, performance, recyclability, and emissions of asphalt pavements containing recycled rubber. RPA members provide guidance to government policy makers on the means of ensuring quality assurance and capacity of these processes while encouraging their use.

Scrap Tire Management Council (RMA Affiliate)
1400 K Street, NW, Suite 900
Washington DC 20005
(202)408-7781
(202)682-4854 fax
The mission of the council is to assist in developing and promoting the utilization of scrap tires as a valuable resource. The council's primary goal is the creation of sufficient market capacity to consume 100% of annually generated scrap tire. The SMTC provides the following general services:

- Education and communication;
- General relations;
- Information development;
- Industry relations;
- Market development;
- New technologies;
- Information resources; and
- Additional publications are also available through the council.

Solid Waste Association of North America (SWANA)
PO Box 7219
Silver Spring, MD
USA 20910-7219
(301)585-2898
(301)589-7068 fax
http://www.swana.org/

The purpose of SWANA is to foster the environmentally and economically sound management of municipal solid waste.

US EPA ARCHIVE DOCUMENT

Southwest Public Recycling Association

PO Box 27210
Tucson, AZ 85726
(520)791-4069

SPRA is a non-profit organization based out of Tucson, Arizona with satellite offices in Colorado, New Mexico, Utah, and West Texas. Formed in 1991 by the mayors of 20 southwestern cities (from Arizona, Colorado, Nevada, New Mexico, Utah, and West Texas), SPRA presently represents over 5 million people from 104 political jurisdictions in its six state region, and over 160 associate members. SPRA is funded by membership dues and fees for services. In addition, SPRA receives support from the Arizona Department of Environmental Quality, Colorado Office of Energy Conservation, Nevada Division of Environmental Protection, New Mexico Energy, Minerals and Natural Resources Department, Texas Natural Resource Conservation Commission, Utah Department of Environmental Quality, and the United States Environmental Protection Agency.

SPRA's mission is to promote, strengthen and provide leadership in waste reduction, reuse, and recycling throughout the Southwest. SPRA's goals include: encourage waste reduction and reuse; increase recyclables recovered from the waste stream; increase utilization of recycled and recovered products; promote manufacturing processes that use recycled materials; and promote the buy recycled philosophy.

Tire Retread Information Bureau

900 Weldon Grove
Pacific Grove, CA 93950
(408)372-1917
(408)372-9210 fax
(888)473-8732

Bureau includes information on point of sale materials. Includes a speakers bureau. Sends related news releases and serves as an information clearing house. The bureau functions as a referral service to companies offering raw materials, and businesses purchasing value added products.

Vinyl Institute

65 Madison Avenue
Morristown, NV 07960
(973)898-6699
(973)898-6633 fax

The Vinyl Institute was formed to promote and protect the continued growth of the polyvinyl chloride (PVC) and vinyl chloride monomer (VCM) industries. Members must be domestic manufacturers of VCM or PVC. Affiliate membership is available to domestic companies that manufacture adjuvants or other raw materials used in the manufacture, compounding or fabrication of PVC.

State & Provincial Recycling Organizations

Please contact the National Recycling Coalition to obtain the name, address, phone number and contact person for the recycling organization(s) in your state.

Newsletters & Periodicals

US EPA ARCHIVE DOCUMENT

American Glass Review
Publisher:
Doctorow Communications Inc.
PO Box 2147
Clifton, NJ 07015
(201)779-1600
(201)779-3242 fax

Provides information about manufacturers, processors, and distributors of flat glass, glass containers, fiberglass, glass tableware and specialty glass.

Beverage World
Publisher:
Strategic Business Communications
(212)822-5930
http://www.beverage-world.com/

Bottlemaking Technology and Marketing News
Publisher:
Technology Forecast
9 Drumlin Rd.
Westport, CT 06880

Provides information about plastic and glass bottle markets, technology, and recycling.

Container and Packaging Recycling Update
Publisher:
Container Recycling Institute
1400 16th Street N.W. Ste. 250
Washington, DC 20036
(202)797-6839

The Container and Packaging Recycling Update contains information on new concerns with recycled containers. It also includes information on recycling rates for bottles and cans and new regulations in states, provinces and international recycling containers.

Dealer News
Publisher:
National Tire Dealers and Retreaders Association
1250 I St. NW, Suite 400
Washington, DC 20005
(202)876-8372
(202)682-3999

Trade magazine for independent tire dealers and retreaders.

Glass Recycling
Publisher:
Glass Packaging Institute
1627 K St. NW, Suite 800
Washington, DC 20006
(202)887-4850
http://www.gpi.org/

A newsletter published by the Glass Packaging Institute representing the manufacturers of glass containers. Information includes case studies, general informational articles, evaluation of costs, and company listings.

Internet access will allow you to tap into the latest information on glass container recycling, marketing and manufacturing. The Glass Packaging Institute recently became one of the first packaging industry organizations to offer its own home page. The site, http://www.gpi.org, features a wide selection of topics including recycling issues, marketing success stories and the latest news from GPI.

Materials Recovery & Recycling Yearbook
25 Sylvan Road South, Suite F
Westport, CT 06880
(203)226-3238
(203)226-3239 fax

Directory that provides an overview of design, operation of MRF's (Material Recovery Facilities) in the U.S.A.

Plastic News
Publisher:
Crain Communications, Inc.
1725 Merriman Road
Akron, OH 44313-3185
(216)836-9180

Identifies and connects the manufacturers and suppliers. Covers financial moves, plant closing, acquisitions, process developments, new machinery and price indexing.

Plastics Recycling Update
Publisher:
Resource Recycling, Inc.
Box 10540
Portland, OR 97210
(503)227-1319

Review of various magazines, newsletters, and recent books valuable to the recycling industry; contains current information on markets, legislation, research, data, technology and economic issues.

Plastics World

PTN Publishing Corporation
445 Broad Hollow Road, Suite 21
Melville, NY 11747-4722
(516)845-2700

For processors and designers involved in buying and specifying plastics materials, additives, and processing equipment

Recycling Times

4301 Connecticut Ave. NW, #300
Washington, DC 20008
(800)829-5443

Current Recycling market trends and prices Provides a rundown of municipal recycling markets. Cost is $99 for 26 issues.

Recycling Today

4012 Bridge Avenue
Cleveland, Ohio 44113-3320
(800)456-0707
(216)961-0364 fax

Recycling Today is a business magazine for recycling professionals providing the latest information on market development, equipment, waste recovery efforts, and regulatory changes.

Resource Recovery Report

5313 38th Street NW
Washington, DC 20015
(202)362-6034
(202)362-6632 fax

Newsletter that covers news related to waste management, recycling, composting and resource recovery.

Resource Recycling's Bottle-Can Recycling Update: Markets, Legislation, Data, Technology, Economy

Publisher:
Resource Recycling Inc.
PO Box 10540
Portland, OR 97210
(503)227-1319

Resource recycling is North America's recycling and composting journal and it includes: recycling and composting equipment directories; recycling and composting equipment listings; composting updates; market updates; information sources; recycled product news; equipment and product news; events; recycling in cyberspace; and reader services.

Resource Recycling Magazine/Equipment Directory

PO Box 10540
Portland, OR 97210-0540
(503)227-1319
resrecycle@aol.com

Resource Recycling provides the latest information about municipal waste recovery efforts. This includes collection system assessments, processing developments, markets analysis, and legislative/regulatory reviews. Magazine publishes annual equipment directory for recycling and composting businesses.

Resources for Recycling and Waste Management Entrepreneurs

Publisher:
Resource Recycling
PO Box 10540
Portland, OR 97210-0540
(503)227-1319
email: RESRECYCLE@aol.com

Plastics Recycling Update
An authoritative, systematic source of current information you need everyday - the single-best resource for the latest news in scrap plastic collection, processing and end use. Every issue lists new buyers of scrap plastics, offers expert analysis of the major issues, presents special reports on successful and failed operations and provides extensive details on all the important trends in legislation, equipment and new end-use technologies. Sent monthly via first class mail. $49.00/year.

Container Recycling Report
The best source of news about recycling aluminum cans, glass bottles, steel cans, plastic bottles and composite containers. This report gives you the inside track on market assessments, recycling price trends and analysis, overviews of new technologies, news on scrap buyers, export market projections, bellwether state and local actions, profiles of new markets and special reports on successful and failed strategies. Sent monthly via first class mail. $75.00/year.

Resource Recycling Magazine
The preferred journal of recycling and composting professionals. Each month the magazine provides the latest information about post-consumer waste recovery efforts. This includes collection system assessments, processing developments, market analysis, and legislative/regulatory reviews. Each issue

features a special commodity and has regular departments including news on equipment, recycling and composting programs, association and state activities, and more. Resource Recycling also has five special editions: the Recycling and Composting Equipment Directory in July, supplements on compost, recovered paper and recovered plastics and, in December, an analysis of the year in review. $47.00/year.

Rubber World

Publisher:
Job Lippincott
PO Box 5485
1867 Market St.
Akron, OH 44334-0485
(330)864-2122
(330)864-5298 fax
http://www.rubberworld.com

Today's news, classified ads, technical forums, bulletin board, supplier index, etc. for rubber manufacturers, distributors, etc.

Scrap Tire News

Publisher:
Recycled Research Institute
PO Box 714
133 Mountain Road
Suffield, CT 06078
(860)668-5422
(860)668-5651 fax
Contact: Mary Sikora

Scrap Tire News is a monthly newsletter covering the news and developments in the scrap tire recycling industry. Regular features of Scrap Tire News include news briefs on industry activity, legislative updates, and company profiles. Special articles on new equipment, crumb rubber, tire derived fuels, asphalt rubber, and other markets.

Waste Age

Publisher:
Environmental Industry Association
P.O. Box 420235
Palm Coast, FL 32142
(800)829-5411
(202)966-4868 fax

The magazine, Waste Age, covers topics on industry trends, recycling, waste, and landfills. They are the authoritative voice of waste systems and technology.

Waste Age's Recycling Times

Publisher:
Environmental Industry Association
4301 Connecticut Avenue N.W. Ste. 300
Washington, DC 20008
(800)829-5443
(202)966-4868 fax
P.O. Box 420181
Palm Coast, FL 32142-0181
http://www.wasteage.com/#recycling

The Recycling Times provides new information on recycling, recycling meeting, people on the move in recycling, a markets page, recycling on the net, new products, and business briefs.

Waste News

Crain Communications Inc.
220 E. 42nd Street
New York, NY 10017-5846
(212)210-0100
http://www.wastenews.com/

News and information relating to the solid waste management industry.

US EPA ARCHIVE DOCUMENT

Financial Resources

US EPA ARCHIVE DOCUMENT

Environmental Finance Centers EPA Region 4

100 Alabama S.W.
Atlanta, GA 30303
(404)562-9900

Environmental Finance Centers EPA Region 3

University of Maryland
Coastal and Environmental Policy Program
0112 Skinner Hall
College Park, Maryland 20742
(301)405-6377
(301)314-9581 fax

Environmental Finance Centers EPA Region 2

Syracuse University
The Maxwell School of Citizenship and Public Affairs
219 Maxwell Hall
Syracuse University
Syracuse, NY 13244-1090
(315)443-4000
(315)443-9721 fax

Environmental Finance Centers EPA Region 1

Boston, MA 02203-0001
(617)565-3420

Financial Services Specializing in Waste Management and Recycling

Ally Capital Corp.	(415)331-5500
American Capital Resources	(201)646-1999
Beverly Leasing Associates	(609)881-9333
Environmental Capital Corp.	(413)528-1100
Financial Federal Credit	(708)986-3900
First Analysis Corp.	(312)258-1400
Center Capital Corp.	(215)542-8100
Heritage Financial Corp.	(800)736-3124
ITT Capital Finance	(714)978-1888
Orix Credit Alliance	(800)925-6889
Palmer Capital Corp.	(617)383-1293
Royal Bank of Pennsylvania	(215)668-4700

Leasing Firms Specializing in Waste Management and Recycling

AT&T Credit Corp.	(201)397-4102
AVCO Leasing Services	(404)457-0606
Ally Capital Corp.	(415)331-5500
American Capital Leasing	(503)226-7766
Beverly Leasing Associates	(609)881-9333
Financial Federal Credit	(708)986-3900
Genesis Leasing	(215)997-3610
Heritage Environmental Services	(800)736-3124
Industrial Leasing	(503)228-2111
ITT Commercial Financing	(714)978-1888
LeaseLine Financing	(800)535-4637
SLC Financial	(602)443-8984
Southern Leasing	(816)435-8100
Spring Capital Corp.	(415)461-4557
Systems Leasing Corp.	(714)459-9422
The Associates	(800)421-4779
Venture Leasing & Capital Corp.	(908)603-8540

NAPCOR

Director of Technical Affairs
3770 NationsBank Corp.
100 N. Taylor Street
Charlotte, NC 28202
(704)358-8882

NAPCOR maintains an auto-sort loan program for counties, municipalities, public entities, businesses, and non-profits to purchase automated sorting equipment used to separate post-consumer PET plastics from other plastic containers, primarily PVC. Maximum loan amount is $50,000.

The National Venture Capital Association Directory

National Venture Capital Association
1655 N. Ft. Myer, Suite 700
Arlington, VA 22209
(703)351-5269
http://www.nvca.org/

Northeast Recycling Council

Council of State Governments
139 Main St., Suite 401
Brattleboro, VT 05301
(802)254-3636
http://www.nerc.org/

Pratt's Guide to Venture Capital Sources

Venture Economics
40 West 57th St., Suite 1100
New York, NY 10019
(212)765-5311
http://www.fponline.com/sites/pratts.html

Vankirk's Venture Capital Directory

Vankirk Business Information
2800 Shirlington Rd., Suite 904
Arlington, VA 22206
(703)379-9200

Venture Capital Databases and Networks

A1 Research Corp	(415) 852-9140
American Venture Capital Exchange	(503) 221-9981
Business Capital Sourcing	(805) 564-3620
Business Opportunities Online	(800) 872-8710
DataMerge	(303) 320-8361
Environmental Capital Network	(313) 996-8387
Technology Capital Network	(617) 253-6173
Venture Economics Investor Serv. Group	(617) 345-2504

Venture Capital: Where to Find It; The NASBIC Membership Directory

National Association of Small Business Investment Companies
1199 N. Fairfax St., Suite 200
Alexandria, VA 22314
(703)683-1601

US Department of Energy, NICE3

(303)275-4728

There are numerous regional, state, and local funding sources which may be available throughout the United States. Contact your State Department of Conservation or Environmental Quality to see what programs are available in your state. These divisions of the government can give you information on:

- Market development zones;
- Funding corporations;
- Local Economic Development Agencies;
- State agencies (such as the Department of Conservation);
- Local government programs; and
- Private grant programs.

In addition, they can also provide assistance in the following areas:

- Letters of credit;
- Surety bonds;
- Grants and loans;
- Leasehold agreements;
- Interest rate buydowns;
- Technical assistance; and
- Tax incentives.

US SMALL BUSINESS ADMINISTRATION

Main Office
1441 L St., NW
Washington, DC 20416
(800)827-5722 Answer Desk
(202)205-7717 General Question and Answer Number
(800)697-4636 Computer Access (9600 baud)
http://www.sbaonline.sba.gov/business_finances/pollute/all.html

The US Small Business Administration (USSBA, or SBA) has a variety of loan programs. Most notable to recyclers is the Pollution Control Loan Program. Pollution Control loans are intended to provide loan guarantees to eligible small businesses for the financing of the planning, design, or installation of a pollution control facility. This facility must prevent, reduce, abate, or control any form of pollution, including recycling. The SBA can guarantee up to $1,000,000 for Pollution Control Loans to eligible businesses. This program is administered at the local level. Therefore the best place to start is at your SBA District Office. The SBA also maintains a "Small Business Answer Desk" (1-800-827-5722) which can provide you with information relative to their various programs as well as the telephone numbers and addresses of the District SBA offices.

What you should know about SBA loans.

1. All SBA loan activity is conducted in the form of guaranteed loans, except for direct SBA loans to handicapped business owners.

2. SBA-guaranteed loans are generally administered through commercial lending organizations (i.e. banks). While most banks and other lending institutions can make SBA-guaranteed loans, certain ones, called certified and preferred lenders have special relationships with the SBA which enable the institutions to expedite loans to creditworthy small businesses. Contact the local SBA office for a list of certified and preferred lenders.

3. In order to obtain an SBA-guaranteed loan, you must demonstrate the ability to repay the loan from the cash flow and profits from your business.

4. SBA-guaranteed loans can be used only to finance the start-up, operation, or expansion of a business. The proceeds may not be used to repay other debts, be reinvested in financial instruments, or be used for speculative purposes.

How to obtain an SBA-guaranteed loan.

1. Attempt to obtain a loan from at least one commercial lender. If you are turned down for reasons other than your ability to repay the loan, ask if the lender would be willing to make the loan if it were guaranteed by the SBA. Reasons for rejection may include the amount of the loan, the period of repayment, or the length of time the business has been in operation.

2. The bank will contact the SBA to determine if the loan can be guaranteed by the SBA. If the loan meets SBA criteria, the determination of whether to make the loan rests solely with the bank. The bank will make all necessary arrangements to secure the guarantee the loan with the SBA. If a bank refuses to make a guaranteed loan, the borrower may try another bank.

3. Borrowers must be prepared to pay closing costs on SBA-guaranteed loans. While closing costs depend on many factors, total closing costs between 3 and 5 percent of the loan amount are common.

Small Business Investment Companies

Small Business Investment Companies (SBICs) are privately capitalized, owned and managed investment firms licensed by the SBA that provide equity capital, long-term financing, and management assistance to small businesses. For more information on SBICs, contact the nearest SBA office. A directory of SBICs is available by sending $10 to:

National Association of Small Business Investment Companies
NASBIC Directory
PO Box 4039
Merrifield, VA 22116

The Vinyl Institute

65 Madison Ave.
Morristown, NJ 07960
(201)898-6699

Loan Assistance for the purchase of equipment to sort plastic resins, primarily PVC.

US EPA ARCHIVE DOCUMENT

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US EPA ARCHIVE DOCUMENT