Preferred Packaging Procurement Guidelines

A voluntary program to promote packaging which will minimize disposal impacts on the environment and stimulate recycled materials markets.

STATE OF CALIFORNIA

PETE WILSON
GOVERNOR

JAMES M. STROCK
SECRETARY for ENVIRONMENTAL PROTECTION
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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August 1994
Publication No. 500-94-023

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1 Introduction & Background Information

California faces an enormous solid waste disposal challenge. Every year Californians produce 45 million tons of garbage and approximately one third is packaging. Cities and counties are required to reduce the amount of waste going to landfills by the year 2000 by 50 percent. Currently they are developing strategies to reduce, reuse, and recycle solid waste, and they need your help to make it happen. They can't do it without you!

If environmental goals are to be fully reached in your community, businesses must lead the way. You can help change the habits and practices of your customers and employees. More than ever, consumers are responding by patronizing businesses that show a strong commitment to the environment.

Because of the problems with the disposal of solid waste, there is growing concern and interest in reducing the amount of waste generated while increasing the amount of waste that is recycled. Packaging is one area where significant waste reduction can be accomplished. Packaging manufacturers and retailers have a tremendous opportunity to make a valuable contribution to the overall resolution of these problems. And while there are certainly no absolute formulas or prescriptions for the packaging industry, some basic operating principles are beginning to emerge.

The traditional view of package design, use, and disposal practices must change. The increased cost and limitation of landfill capacity and incineration are driving a myriad of changes in all sectors: government, the public, and business. A key question is what will drive this change? industry initiative? market forces? or government action?

The best response is quick, voluntary action by the business community in developing solutions to reduce packaging waste and toxicity. Package designers, managers, and users should practice the full range of waste prevention options available and appropriate to their particular arena of activity.

This guide is intended to help you do that. It contains an outline of currently available waste prevention tools and strategies in the area of packaging reduction. These are the principles and guidelines that leading packaging firms have found successful in achieving substantial and cost-effective waste prevention.

Many firms have been diligently practicing various aspects of the guidelines already. However, given the pressing nature of the solid waste problem and the public attention focused on it, it is essential to continuously expand efforts. Working hand in hand, retailers and packagers should **voluntarily** choose to aggressively pursue all possible waste reduction strategies, including waste prevention, reuse, and recycling.

Underlying all the guidelines and suggestions in this guide is one paramount objective--to reduce, wherever possible, the total amount and toxicity of packaging waste. The business community cannot afford to fail to meet the long-term needs of customers. In this case, the need is to demonstrate industry leadership in sound environmental practices.

The Rationale for Packaging Waste Prevention

The basic tenet of waste prevention is that by preventing waste material from being produced in the first place, there will be less waste to manage on the disposal end. This will help contain the solid waste fees paid by retailers and the public alike, and will help protect the environment. In addition, eliminating waste often reduces purchasing costs.

You are being asked to take action and support the Preferred Packaging Procurement Guidelines (Chapter 2) and to begin working with your suppliers to reduce packaging.

The Philosophy Behind a Voluntary Program

The essence of this voluntary program is that individual packaging firms and retailers implement substantial, meaningful actions to reduce the impact of packaging on the solid waste stream. Changes in packaging practices need to be introduced across a wide spectrum of products and package types.

Waste prevention in packaging will ultimately involve efforts in a number of areas, including significantly altering or developing new:

- package and product design, production, distribution, merchandising, and use patterns;
- recycling infrastructures for materials recovery; and
- consumer purchasing, use, and disposal habits.

These changes will sometimes be complex and time consuming, and will vary from one package/product type to another.

Many firms are already practicing various forms of waste prevention. However, there are many more opportunities for meaningful advances in this new area of research and development. All packaging producers and users need to make waste prevention a priority. New alliances are forming between suppliers and customers, recyclers and processors, and consumer groups and producers.

In summary, package producers, users, and retailers are being asked to focus on waste prevention and recycled content in packaging by:

- continuing current waste prevention practices;
- beginning new waste prevention practices;
- setting ambitious goals (publicly or privately); and
- measuring and sharing progress toward these goals.

2 Preferred Packaging Procurement Guidelines and Goals

The Preferred Packaging Procurement Guidelines are presented in order of priority, with the objective of reducing the impact on the environment. It is recommended that these guidelines be implemented in order of priority. There may be conflicts between competing goals, such as package minimization and use of recycled content. In general, if you cannot do both, select the option that results in the least amount of waste going to landfills.

Guideline 1: Eliminate

Whenever possible, eliminate the package altogether.

During the research and development stages for new product packaging or existing product packaging, evaluate the need for packaging. Could the product be sold without a package? At the retail level, examples of products that might be sold without packaging include: hardware, such as bolts, nuts, and screws from bins; produce; housewares; and toys.

Guideline 2: Reduce

Reduce the packaging used.

For those products that must be packaged, consider methods of reducing the amount of material used in the packaging. Minimal packaging can be accomplished through:

- product design changes (e.g., concentrates, different product structures);
- modifications to package design (e.g., structure of the package);
- single-material packaging (e.g., one package component); and
- different modes of shipping that require less product packaging (such as warehouse club pallet packs).

Consumable packages are those which are eliminated in the process of using the product so that no packaging remains (e.g. water soluble packets for agricultural chemicals). While consumable packaging can help reduce the solid waste problem, it is not desirable if its use would have a negative impact on air or water quality, or require extreme secondary packaging.

Guideline 3: Reuse

Design packages that are refillable, or reusable.

Refillable/reusable packages are those that may be refilled by either the consumer, retailer, or product producer from bulk or larger containers. Examples include:

- refillable condiment, sugar, and salt containers in restaurants;
- refillable bottles or jugs for detergents, cleaners, and conditioners; and
- reusable shipping or carrying cases which are returned to your supplier.

Refillable packaging is packaging that is refilled or reused for its original purpose, rather than reused for a secondary purpose such as storing refrigerator leftovers or other limited applications.

Guideline 4: Recyclable/Recycled Content

Produce packages that are recyclable. Use recycled materials to produce packages.

Packaging should be designed to maximize the following:

- the compatibility of the package with available recycling systems; and
- the amount of the package that is composed of post-consumer recycled material.

The recyclability of a package is enhanced when that package is made of either a homogeneous material or materials that do not need to be further separated prior to recycling. Similarly, labels, seals, tapes, closures, and so on, should be compatible with recycled material processing systems.

It is important to consider the total recycling system in choosing materials for your packaging. A material should be considered recyclable only if there is an economically viable and widely available system for collecting, processing, and marketing the material.

A package designed to be both recycled and composed of recycled material is the most preferable within this guideline. However, regulatory restrictions (such as Rule 41 of the Uniform Freight Classification or Food and Drug Administration regulations) or structural considerations may limit the use of recycled content.

To the greatest extent possible, recycled content should be composed of post-consumer, recycled material. Post-consumer material is that material which has served its intended end use and has been discarded by a business or consumer.

This does not preclude the use of in-plant or mill scrap, also called pre-consumer scrap, manufacturing scrap, or post-industrial scrap. Pre-consumer scrap has traditionally been gathered and put back into the manufacturing process, and as such, it has never been considered to be the disposal problem that post-consumer waste has been. Alone, it is not sufficient for a package to be considered a recycled content package without post-consumer content.

It is important to ensure that waste prevention does not inadvertently lead to negative health, environmental, or solid waste impacts, for example, switching from a widely recycled material to one that is not readily recycled in exchange for a modest waste prevention outcome.

Because packaging and the products they contain are so varied, you will need to discuss your goals for reduction in packaging with your suppliers. Some packaging will exceed your content goals today, while others may involve technological or regulatory barriers which will slow progress. An example of a barrier is the multitude of federal, state, and local regulations prohibiting the use of post-consumer recycled content in some food, prescription, and personal care products.

The **voluntary** nature of this packaging procurement program allows for the establishment of **stretch** goals (or "desired" goals) since there is no governmentally imposed punitive action if efforts fall short. These voluntary *stretch* goals will generate greater results than legally mandated minimums. Therefore, retailers and manufacturers are encouraged to adopt the "desired" goals and be aggressive and creative in future endeavors.

3 How to Use the Guidelines

Creative, new approaches are needed to get at the source of our garbage problems by designing, making, and using products differently. This chapter describes some recommended methodologies for implementing the Preferred Packaging Procurement Guidelines.

The Highest Priority: Waste Prevention

Waste prevention, often called "source reduction," is not a new concept. Some types of waste prevention have been practiced over the years under different names such as "resource conservation" or "waste minimization." Manufacturers have long taken actions to reduce certain kinds of process wastes and to reduce the use of some materials. This has helped to make their operations more efficient and to stabilize consumer prices.

A Working Definition

The term "waste prevention" is rarely well defined or well understood. For packaging, the definition follows:

Waste prevention is a collection of activities and actions that, in combination or individually, leads to a net reduction in the amount and/or toxicity of municipal solid waste. It is intended to reduce pollution and conserve resources.

Historically, waste management has been an "end-of-the-pipe" (after the product or package becomes waste) activity. In contrast, waste prevention is not a direct waste management tool, although it can have a positive impact on waste management systems. It is a non-traditional approach to the municipal solid waste management dilemma in that it addresses the waste problem before the waste is generated. It involves considering the ultimate destiny of products and/or packages when making decisions on how the products/packages are made and which materials are used.

Waste Prevention in Action

As a concept, waste prevention is easy to promote but sometimes difficult to put into practical application or to measure. Definitions of waste prevention all translate into some version of "less material". It naturally follows that producing lesser and fewer packages inevitably generates less solid waste.

Here is a preliminary checklist of waste prevention options to consider as you analyze any package or product for its effectiveness.

1. Eliminate or reduce toxic substances in the package.
2. Eliminate package or reduce amount of material used.
3. Modify product design.
4. Substitute more appropriate materials.
5. Reduce volume or "lightweight" packaging.
6. Produce concentrated product.
7. Distribute in bulk or in larger sizes.
8. Combine functions of more than one product.
9. Increase product life span.
10. Improve repairability.
11. Produce for consumer reuse.
12. Build in a system for returning vendor packaging.

Despite the obstacles, waste prevention rightfully remains the preferred method of attacking solid waste. Efforts to implement it must appear more frequently in package design choices. What follows are some basic applications and executions of the package waste prevention concept.

No Packaging

The most preferable way to practice waste prevention is no package at all. Many durable items can be sold with a simple hang tag or only a price tag or sticker. Instead they are often sold in boxes, pouches or other types of packaging. Examples are: sporting goods; hand tools; and housewares, such as kitchen gadgets, pots and pans.

Some stores offer a 5 cent discount to customers who do not have their purchases bagged and others offer a discount to customers who provide their own bags. This reusing of a package (shopping bag) that the customer already had, would fall under Guideline 3, Reusable.

When products are packaged for product containment or protection rather than merchandising, and when reusable or semi-permanent merchandising systems can be developed, major waste prevention is possible. Reusable hosiery racks, hang racks, hardware bins, cosmetic racks, and shelf organizers are a few examples.

In addition, some examples of waste prevention are not always obvious to the consumer, such as distribution packaging. One national restaurant chain, for example, has switched from disposable soft drink mix containers to pumping syrup from delivery trucks directly into the restaurant's own reusable tanks. Other examples of reduced distribution packaging include redesigning boxes to hold more product, removing dividers from cold cup shipping cartons, and the use of returnable packaging such as plastic soft drink bottle cases and specialized automotive parts shipping totes.

Reduced Material Volume

Appropriately, the first waste prevention question is: "*Do I need this package at all?*" If the answer is yes, then a range of techniques becomes available to reduce materials content, such as the more efficient use of existing materials within current designs, generally known as "lightweighting." Many firms have long used this approach as a part of their cost control efforts to achieve extensive reductions in weight over time. Since these successes tend to be part of an evolving program, consumers and regulators often do not understand that a materials use reduction has occurred. As a result, designers rarely get much public credit or attention. Plastic packaging producers can strengthen their case by helping the public to understand that plastics are a prime candidate for lightweighting because of their great versatility in design and continued technical advances in their use.

Larger Sizes

Moving to a larger size package may seem mundane, yet it can deliver major waste prevention outcomes. For example, a 25 lb. laundry detergent package uses one-fifth the amount of packaging material per pound of product as does the most popular 42-oz. size. Again, package design takes on new dimensions as consumers are asked to handle and store larger, heavier containers, perhaps using them as refill sources for smaller containers, as when refilling the kitchen sugar bowl from a 5 or 10 lb. sack.

Concentrates

Concentrated products can significantly reduce both solid waste and packaging. A 12-oz. can of frozen orange juice concentrate contains the juice from 10 to 15 oranges. While the consumer would throw the peels away, the juice packer makes use of them, resulting in less solid waste. Concentrated products are generally smaller and, therefore, require smaller packages. Frozen orange juice concentrate requires a smaller package then fresh, ready to use juice. Some laundry products are also available in either a concentrated, ready-to-use form or as a refill requiring dilution with water.

Convenience is the key to successful concentrate design. Less consumer resistance is likely when consumers use the

product directly, as in concentrated detergent or "extra strength" medicines. If consumers are called on to dilute or mix contents, as in concentrated juice, dry soup or beverage mix, then the package designer faces an added challenge, making it as effortless and error-proof as possible, while holding material usage to a minimum. Frozen orange juice concentrate, with its peel-top and empty container, which can be used as the water measuring unit, exemplifies this approach.

Single Packaging

The value of "gift" boxes for items which can simply be overwrapped, such as soap or liquor, is increasingly being challenged. The critics argue that consumers should have the option of doing their own wrapping for true gift occasions, rather than being forced to buy "extra" packaging in order to get the item. Individual display packaging, particularly shadow boxes for certain toiletries, are under similar scrutiny. Designers need to re-evaluate the utility of multiple layers of packaging and provide other options for gift boxes for special occasions.

Reusability

A number of household cleaning products can now be purchased in a large "refill" size, as a concentrate, or in thin plastic pouches, all of which eliminate duplicate packaging and dispensers or spray triggers. Fabric softener, liquid soap, window, and kitchen cleansers are examples of products sold in reusable and refillable packages. Reusable or returnable containers, which are generally larger and heavier to withstand multiple uses, can reduce the amount of waste requiring disposal only if they are actually refilled some minimum number of times. Returnable containers also require cleaning and a transportation system to ensure their return. Use of returnables is growing in industrial and distribution packaging, such as bottle cases and shipping totes, which are returned to suppliers for reuse.

Toxicity

In addition to weight and/or volume reductions, reducing the toxicity of packaging is also an important aspect of waste prevention. Some manufacturers have eliminated undesirable additives that may pose a problem during disposal when a less toxic, economical, and suitably performing substitute had been available. For example, many manufacturers have reformulated color concentrates and inks to replace those containing heavy metals, such as cadmium.

Recycled Content/Recyclable Packages

Although recycling is the most developed and widespread means of reducing the impact of packaging on solid waste, it is far from reaching its full potential. Public and government pressure is growing for packagers to make their packages with recycled materials, and to increase or establish recycling systems. Packaging composed of materials commonly recycled in most communities should receive preference over multi-material packaging which is difficult to separate or a material which has no collection infrastructure.

Recycling efforts have gained widespread support from solid waste officials, community leaders, business and the public. Comprehensive recycling laws, both voluntary and mandatory, have been enacted in 32 states and the District of Columbia. Virtually every state has some form of recycling available.

Closed-loop vs. Open-loop Recycling

The absolute best package from recycling standpoint is one that would be recycled 100% of the time into similar packaging and would contain 100% recycled materials. This is referred to as "closed-loop" recycling and is most desirable because it keeps material out of landfills and incinerators indefinitely.

"Open-loop" recycling takes two forms:

- a package that is recycled into some other kind of product, such as plastic bottles into fiber for clothing, sleeping bags, carpet, etc.; or
- a package that is made from recycled material but then discarded after use, such as cereal cartons that are made from recycled newsprint or corrugated, that are incinerated or landfilled after use.

Recycled Content

The primary values of using recycled material in packaging are that it keeps materials out of landfills by providing a market for recycled material and that it saves resources. End markets can be the weakest part of materials recycling systems. Therefore, packagers should make their packages out of the high quality recycled materials that are currently available. There are several ways to do this:

Recycled Material Specification

The most straightforward approach to using recycled material is simply to substitute it for virgin material. In some instances this has been practiced for years. For example, aluminum and steel can sheet metals are often manufactured with recycled material. Another example is glass containers made from cullet (the term used within the industry for the stream of recycled glass).

In fact, there are a growing number of examples of recycled materials in all of the major package material categories (i.e., paperboard/corrugated, steel, glass, aluminum, and plastic). While some recycling programs are well established, others can be and have been established in relatively short periods of time with high levels of recycled content. For instance, plastic bottles for non-food products are now on the market with recycled content levels as high as 100%.

Material Change

Another way of incorporating recycled content into packaging is to switch from one material which is not available with recycled content to one that is, such as changing from clay-coated papers to solid bleached sulfite paperboard.

Package Re-specification

A very similar approach is to alter package specification or design to permit the incorporation of recycled material. For example, choosing a darker color for a paper or plastic packaging material could allow for incorporation of a wider range of recycled materials. This may prove difficult for some packages such as consumer shelf brands, but others, such as industrial supply or distribution containers, may be less sensitive to color demands.

Infrastructure Development

As mentioned earlier, producers in all of the major package material categories already use recycled materials to some extent. In fact, a major barrier to increased use of recycled materials in several major package types is inadequate supply. Specifically, producers of aluminum and steel cans, certain types of paper, and PET and HDPE plastic bottles report that they would use higher levels of recycled materials if they were available in good and consistent quality and supply.

In some cases, recycling infrastructures (collection, processors, and markets) are well established--such as those for aluminum cans, steel cans, corrugated containers, and clear glass bottles. In other cases, such as plastic bottles and green glass, new infrastructures must be developed. Package producers can play a key role in developing these systems by becoming markets for the recycled material. In addition, some producers have chosen to go even further and have formed partnerships with material

producers and recyclers to establish a totally integrated recycling capability from collection all the way through processing, fabrication, and reuse in new packages.

One of the keys to development of the these infrastructures is supplier-customer relationships and partnerships. The most successful experiences occur when package producers--the end customers--seek sources of recycled material from their suppliers and form development partnerships. This is consistent with a demand-driven economy. Sources, specifications, test results, and quantities can then be developed to meet both customer needs and supplier capabilities.

4 Setting Goals and Measuring Progress

Municipal solid waste reduction, in order to really be successful, needs some goals and evaluation. Quantifiable goals help stimulate and shape the development of waste reduction programs; measurement techniques allow the tracking of their progress. While insufficient data and measurement tools currently exist upon which to base and track quantifiable goals, the very act of setting such goals may stimulate the types of activities needed to generate that data and those tools.

All preferred packaging procurement guidelines should include specific, quantifiable goals for several reasons. Goals or objectives are an essential part of any well managed program. They provide the vehicle to achieve alignment between various organizations within a given company and are absolutely necessary to measure progress, establish accountability, and provide continuity over a time period.

Goals: Inform & Motivate

Communities cannot realistically plan for their solid waste systems without projections of the impact of package reduction programs. Therefore, it is very important that the packaging industry begin to formulate goals for waste reduction, to publish these goals, and to report on progress toward meeting them.

An additional factor that makes industry goal setting a high priority is mounting public and legislative pressure to set target threshold levels for such things as package recycling rates or recycled content percentages. More and more states are convening boards and task forces to address these issues and set challenging but obtainable objectives. There is a growing feeling that without such figures, very little tangible progress will be made, and unless package producers come forward with their commitments, these mandates will come from the public sector.

The fundamental basis of all package waste prevention goals should be the impact on the solid waste stream. The goals should state and measure, in one way or another, how much packaging material or heavy metals will be diverted from landfills. Vague, undefined objectives, such as "Environmental Friendly", "Safe for Incineration or Landfills", or "Degradable" are neither adequate nor appropriate for setting package waste prevention goals.

Flexible Approach

There is no "One Best Way" for all package producers and users to set waste prevention goals. Instead, each firm should determine the approach that is most appropriate for their particular business, organization, and culture. As more and more businesses participate in waste reduction programs, new ways of measuring and targeting waste reduction goals will be developed.

Obviously, to maximize the impact and value of a package waste reduction program and its associated goals, the program should ultimately address a firm's entire spectrum of packaging. Many will choose to begin their programs with products in business areas that are most conducive to rapid progress. However, while single product efforts are a good starting point, they should not be viewed as an end point.

Goals Should Be Time Based

One of the principles of good goal setting is that it should be precise and specific. All goals should be time based to be meaningful. For example, "25% increase in reuse rate" is much less meaningful than "By July 1, 1995, decrease packaging materials by 25% compared to July 1, 1990 levels", which clearly eliminates any ambiguity about the objective and its time references, while remaining consistent with the practices of goal setting.

Goals Should Motivate

Another principle of goal setting is that goals should be established in such a way so that they encourage the desired behavior--in this case, reduction of packaging waste. Therefore, goals should be stated in such a way that the people most responsible for the key packaging design and marketing decisions necessary to achieve reductions will be accountable for the results. Also, goals set too high or too low are ineffective, so research all issues thoroughly before setting preliminary goals. Then adjust them as needed.

Goal Setting Options

Some of the ways that a firm might consider developing waste prevention goals are:

Net Reduction Goals

This goal would target reduction of a firm's total contribution of all packaging materials to incineration and landfill by a given percentage or tonnage. In coming up with this figure, consideration of all reduction efforts used (package elimination, minimization, reuse, recyclability and recycled content) must be quantified.

Individual Package Goals

Many firms begin their package reduction programs by focusing on one or two of the Preferred Packaging Procurement Guidelines, such as recycled content or refill/reuse. They look at all packages in their system with the eye to increase recycled content or reusability. This allows them to set meaningful targets in those areas that have the most potential for their particular situation.

One caution about individual goals: Be sure that working toward goals in one or two areas does not inadvertently lead to a net increase in overall package waste by forcing growth in other categories. For instance, if a firm switches materials to achieve lightweighting, but moves away from a commonly recycled material in the process, it must insure that the gains from lightweighting significantly offset the loss from recycling.

Incremental vs. Absolute

Some goals can be stated as incremental, such as an average package material reduction of 10% versus current levels. Other goals can be stated as absolute levels, such as a minimum of 25% recycled content by July 1, 1995.

Total Company Goal

Another dimension is how to report goals organizationally. The variations in possibilities are almost limitless. For a single or very dominant product firm, the most meaningful goal might be for a single package or family of packages.

For a large multi-divisional or decentralized firm, the logistics of assembling a single corporate-wide target for something like recycled content can be staggering and will lose meaning if an individual business unit's accountability is lost. Therefore, business unit or even sub-unit goals are more relevant.

Material Focus

Where package material types may be common to much of the firm and may be purchased through a central department, a single company-wide target for recycled content would be appropriate.

New Package Introductions

Another way of approaching waste reduction is to set targets for the introduction or expansion of new package types, such as a refill size or concentrate, within a given time frame. Nonetheless, these commitments are solid, demonstrable indicators of efforts to keep packaging out of the waste stream.

Many firms will probably find that a mixture of the various approaches described above is most meaningful and consistent with the principles of good goal setting.

Data Needs

You will discover that the sources of quantifiable packaging data can be in many different forms, formats, and locations. Some data, such as package weight or volume, are available within the firm. Others, like recycled content or recycled rate, are with suppliers or material trade associations. Still others may not be readily available from any source, such as consumer refill rate, and will require a research program to quantify.

Another factor to consider is that some data is most readily available in terms of dollars, rather than weight or volume of material. Obviously, in using financial data as the basis for calculating waste prevention, one must be careful to ensure accurate representation of weight or volume of materials.

In addition, there are numerous commercial implications to consider, such as market expansion or contraction, brand shifts, and imports/exports, that will influence the gross amount of packaging materials for a given product independent of its package design.

Once again, the principles of good goal setting and an appropriate data system should prevail. That is, the data system need not be cumbersome and bureaucratic, but should build on existing sources and data as much as possible.

Ensuring Goal Success

As with other company programs, management endorsement, support, and commitment is important and includes:

- consistency with corporate policy;
- executive level overall responsibility;
- implementation teams of the appropriate disciplines;
- intermediate milestones and structured review processes;
- sub-goals at the individual/responsible manager level; and
- employee awards and recognition for waste prevention ideas.

Measuring Package Reduction

There are several ways to measure package waste prevention, including weight reduction, volume reduction and toxicity reduction.

By Weight:

To measure the weight reduction in a package, a packaging ratio (PR) can be used. It follows:

$$PR_W = \frac{\text{total package weight}}{\text{product weight}}$$

The packaging ratio (PR) of the existing package can be calculated and compared to the PR of the new package. The two resulting numbers can be used to calculate the percent reduction in weight. For example, the first year PR weight could be 2, and the second year PR weight could be 1, resulting in a 50% reduction.

By volume:

To measure the volume reduction of a package, a packaging ratio (PR) can be used. It follows:

$$PR_V = \frac{\text{total package volume}}{\text{product volume}}$$

The packaging ratio(PR) of the existing package can be calculated and compared to the PR of the new package. The two resulting numbers can be used to calculate

the percent reduction in volume. For example, the first year PR volume could be 2, and the second year PR volume could be 1, resulting in a 50% reduction.

Calculating Overall Manufacturer Reduction

In determining a baseline figure calculating overall reduction, each manufacturer should project the weight or volume of packaging needed if no change is made in packaging, and compare this to the weight or volume if the reduction is implemented. This figure can be calculated by measuring the per package weight or volume under the current practice, comparing it to the new packaging practice (see above), and multiplying either the weight or volume reduction times the number of units sold. In this way, a manufacturer can use large gains in one product or product line to offset other products or product lines which do not meet the goal.

Calculating Recovered Material Used In Manufacture

There are at least two ways of measuring the percent of recovered material used in packaging. You can calculate and report this figure on a package by package basis, or across an entire classification of packages which are identical with respect to recovered material content. As with waste prevention planning, implementation, and reporting, the procedures established for planning, implementing, and measuring use of recovered material content will very from company to company. The essential attribute is the percent of post-consumer material that is used.

For example, if your company manufactures and sells 10 products in paper packaging, it might be easier for you to assess the system-wide ratio between virgin plus post-industrial material and post-consumer recovered material. If your standard mix of materials is 40% post-consumer, 20% post-industrial, and 40% virgin, then your post-consumer recovered material content for all packages manufactured from that mix is 40%. These figures may be based on quarterly or annual data, as long as the accounting is consistently used.

If the products you package require several different paper grades, it may be easier for you to report and track on a package by package basis. For example, if, for one package, you must use 50% virgin material, and another requires only 40%, then these could be reported separately. As you establish corporate goals, the tracking system appropriate to your company will emerge. You can use existing data sources, or create new ones. Do whatever works best, as long as you can keep track of materials used.

5 Progress Reports

Progress reports are an essential component to substantiate industry's commitment to reduce the amount of packaging that ends up as waste in landfills. Progress reports are also an important educational tool. They can serve to significantly increase consumer awareness of facts and issues about packaging and waste disposal. One of the major roles that progress reports will play is to highlight the fact that corporations, communities, and consumers share the responsibility for reducing waste.

Content

Progress reports should be accurate and contain quantifiable results, while relating these results to environmental objectives. Packaging improvements may not be immediately visible to the consumer. The data in these reports may be reported and accounted for in many different ways, including total corporate average by division, or for a given product category. These methods of dividing the data allow flexibility in the report format to accommodate various business strategies and corporate organizations.

Data in these reports should also represent a sustainable level of achievement (i.e. not a one-time peak) which can be maintained over normal operating conditions. Data can be presented in a variety of formats but, most important, it must serve as an indicator of **true** progress in minimizing packaging and establishing a baseline for future progress. A sample format is provided on page 16.

Communication

It is important to communicate to stockholders, company employees, packaging suppliers, and community leaders. Take credit for your achievements. Some possible formats for presenting information include:

- internal company newsletter;
- company annual reports; and
- "promotional" materials, such as brochures, videotapes, and slide shows.

Reporting formats should be, themselves, good examples of waste reduction. Some examples are using both sides of the page, keeping formats short and concise, and using paper with recycled content.

The annual report format is especially effective for presenting a capsule summary of progress toward company goals of packaging reduction and increased use of recycled materials. An article or short letter from the CEO can help underscore the importance of and commitment to the effort. Another possible item to include is an environmental mission statement.

Other materials that can be used to convey information are consumer or trade brochures, videotapes, slide shows, educational kits, and posters. These materials could address issues important to the people who receive or review them. For example, a brochure targeted at the community might summarize efforts to reduce municipal solid waste, while another brochure might summarize items more specific to other manufacturers, such as research efforts the company has undertaken.

Videotapes and slide shows can be used to depict efforts toward waste prevention in a story-like format. An example could be the "story of a major packaging change", e.g., where the number of components was reduced. The story could include consumer reaction to the change, as well as how the packaging change affects the municipal solid waste stream.

Education kits and posters can also be used to increase public awareness of progress toward goals. The kits could summarize the progress of industry as a whole, and posters could highlight the progress of individual firms.

Reports should be distributed at least once a year and whenever major packaging changes occur in the marketplace. The California Integrated Waste Management Board would also like to be placed on your mailing list.

Reducing the amount of packaging waste is an effective and efficient way to help stem the rising tide of garbage in California. If the business community responds by developing solutions and educating employees and consumers, governmental mandates may be avoided in the future.

Set achievable goals, then commit to attaining them. Track any costs and savings involved in your efforts. That information will be useful in determining cost to benefit ratios, and promoting expansion of your waste reduction efforts in the future.

Your bottom line is important, and by implementing these packaging guidelines you can continue to be competitive in the market place. Good luck in your endeavors!

PROGRESS REPORT DATA:

	SPECIFIC PACKAGES	SPECIFIC BRANDS	INDIVIDUAL BRAND CATEGORIES	MAJOR BUSINESS UNITS	TOTAL COMPANY
Elimination Goal: Target Date: Current Status:					
Minimize Goal: Target Date: Current Status:					
Refill/Reuse Goal: Target Date: Current Status:					
Recyclability Goal: Target Date: Current Status:					
Post-Industrial* Goal: Target Date: Current Status:					
Post-Consumer* Goal: Target Date: Current Status:					
Total Reduction Goal: Target Date: Current Status:					

* Recycled content

Packaging Analysis Checklist

Without compromising health, safety, or product integrity standards or violating statutory or regulatory requirements, can the preferred packaging procurement practices be implemented? Following is a checklist for retailers to use with their vendors on all packaging: unit packaging, secondary packaging, and shipping containers (tertiary packaging).

		YES	NO
A.	**Toxics in Packaging**		
1.	Are there toxic materials or agents in the content of packaging, or are they used in the manufacture of packaging?	____	____
If so:			
2.	Can non-toxic agents or materials be eliminated?	____	____
3.	Can the toxic agents or materials be substituted?	____	____
4.	Does the total content of lead, mercury, cadmium, and hexavalent chromium exceed the maximum allowable rate.	____	____
B.	**Packaging Elimination, Reduction and Reuse**		
1.	Can the package be eliminated?	____	____
If the package cannot be eliminated:			
2.	Can the packaging be minimized through:		
-	product-design changes?	____	____
-	package-design changes?	____	____
-	elimination of secondary package or wrapping material?	____	____
-	decreasing size of packaging-to-product ratio?	____	____
-	other volume reduction?	____	____
3.	Can the package be made so that is eliminated in using the product?	____	____
4.	Can the package be made returnable for reuse and redistribution?	____	____
5.	Can the package be made to be refilled by a customer or consumer either from bulk or larger containers?	____	____
6.	Can the package be made to have identifiable and valuable consumer reuse for another purpose?	____	____
C.	**Packaging Recyclability?**		
1.	Is the package recyclable? (Packaging is recyclable if there is a widely available, economically viable collection, processing, and marketing system that could be developed)	____	____
If the packaging is not presently recyclable:			
2.	Can the package be made easier to recycle in that it is composed predominantly of a of a single material for which an economically viable collection, processing, and marketing system could be developed?	____	____

		YES	NO
3.	If the packaging is made of more than one material, can it be altered and made from just one material?	____	____
4.	If the non-homogeneous materials cannot be eliminated, can they be made to be removed easily so as not to prevent, interfere with, or add cost to the recycling process?	____	____
5.	Does the packaging contain inks, dyes, or tints which can be removed to enhance recyclability?	____	____
6.	Should you switch to another material?	____	____
7.	If you wish to change the type of packaging material used, do you sacrifice any vital packaging properties or aesthetics?	____	____

D. Recycled Content of Packaging — **PERCENT**

1.	In total, what percent of recycled content is used (including pos-consumer and post-industrial)?	____%	
2.	What percent of **post-consumer** recycled content is used?	____%	
3.	Does the package contain the maximum feasible amount of post-consumer material?	____	____
4.	What percentage of post-consumer content is possible without:		
	a. Adversely affecting the package performance?	____%	
	b. Increasing the volume/weight to an excess amount? (Please explain any limitations.)	____%	
5.	Is the vendor able to verify the percentage of post-consumer content in the packaging material?	____	____
6.	Does the packaging carry a seal which endorses the vendor's claim? (e.g. Green Seal, Scientific Certification Systems)	____	____

E. In-store Recycling Considerations

Plastics:

1.	Do you currently receive only one type of flexible film (stretch wrap)?	____	____
2.	To make in-store recycling easier, have you considered selecting one plastic material and asking your vendors to ship using only that one?	____	____

Corrugated:

3.	Do you have an in-store baler to handle corrugated?	____	____
4.	Do you have it picked up by a recycler or by your own fleet?	____	____
5.	If not, have you asked one of the vendors who regularly visits your store to backhaul it for you?	____	____

Sample Vendor Letter

Dear Valued Supplier:

The successful marketing of goods and services is the result of retailers and vendors anticipating and responding to the challenge of evolving customer demands.

Today, that challenge is even more complex due to the emergence of a new force - environmental issues. (*Company Name*) shares the national concern for improvement of our environment and conservation of our natural resources. We are committed to satisfying customer demand for environmentally sensitive product and packaging. This commitment will impact virtually everything we sell.

Recent surveys indicate that many customers increasingly make buying decisions based upon environmentally oriented packaging and product. Product packaging is a major component of our country's acute solid waste disposal problem.

Together, we can implement innovative solid waste solutions as an effective alternative to government mandated packaging or bans.

Specifically, our buyers are looking for:

- Opportunities to eliminate or minimize packaging by volume and by weight by reducing packaging materials used on the products you manufacture or ship;
- Opportunities to incorporate the use of reusable and refillable packaging;
- Products that use increasing amounts of recycled materials in their packaging; and
- Opportunities to use packaging which is recyclable in the majority of recycling systems today.

In general, our procurement officers have been instructed to look for new products with less packaging and more recycled content.

If your firm would like to join us in making a commitment for better packaging, we welcome the opportunity to talk with you about a mutually beneficial program.

Thank you for your support.

For More Information

California Integrated Waste Management Board (CIWMB) Waste Prevention Information Exchange, (916) 255-INFO

CIWMB Buy Recycled Program, (916) 255-2406

Department of Toxic Substances Control, (916) 324-1826

Credits

The California Integrated Waste Management Board wishes to thank the Washington Retail Association and Patty Schwegman, Environmental Projects Coordinator, for permission to adapt their Preferred Packaging Procurement Guidelines for use in California.