

RESOURCEFUL PURCHASING

A Hands-On Buyers' Manual with How-To-Do-It Guidance
for Source Reduction and Recycled Products

from

The Alameda County Source Reduction and Recycling Board

by

Nancy VandenBerg

MARKETS FOR RECYCLED PRODUCTS

with

Susan Kinsella & Associates

and

Lallatin & Associates

April, 1996

READ ME

This disk contains the entire text of the Resourceful Purchasing Manual. Kindly acknowledge and footnote the title, authors and the project sponsor if you extract information for your own documents.

Authors: Nancy Vandenberg, Markets for Recycled Products - lead
Susan Kinsella, Susan Kinsella and Associates
Carla S. Lallatin, Lallatin & Associates

Sponsor: Alameda County Source Reduction and Recycling Board

MANUAL DETAILS

The 284 page manual is arranged in 31 files in Word 6 (Windows 3) format and uses about 1,100,000 bytes.

29 files are document or doc. files
2 files are templates or .dot files

Font: Schoolbook (Truetype). Text is 12 pitch, Chapter titles are 14 pitch, headers and footers are 10 pitch and line spacing is “at least” 14 pt.

Margins: 1” top and bottom, 1.25” left and right and .5 from edge for headers and footers.

Caution: Each file is paginated consecutively. Changes to font, pitch, line spacing or margins will affect internal page breaks and pagination.

PRINTING DIRECTIONS

If you print out the document for use as a reference tool, it is helpful to use tabs to divide the chapters. The tab.dot files are designed for Avery Ready Index tabs.

A print-out of the Table of Contents will give you a detailed reference tool for the subjects covered in the manual.

Label files are included for Avery front and spine binder labels.

FILE NAME FORMATS

The alpha-numeric file names will help you keep the printed document in order. In general, numbers conform to chapter numbers, a-b-c's refer to introductory pages and Roman numerals refer to appendices.

All but the tab files are document or .doc format.

FILE NAMES AND CONTENTS

Label 1.doc = Binder label formatted to fit Avery 6464 removable
(or 5164 permanent) 3 1/3 x 4 inch labels

Label 2.doc = Binder Spine label formatted to fit Avery 6460 removable
(or 5160 permanent) 1 x 2 5/8 inch labels

Tab1.dot = template for 15 tab index for Avery Ready Index RI-213-15

Tab2.dot = template for 5 tab index for Avery Ready Index RI-213-5

atitle.doc = Title Page

backnol.doc = Acknowledgments and original report materials

ccontent.doc = Table of Contents

1intro.doc = Introduction

2policy.doc = Model Policy and Implementation Guidelines

3laws.doc = Federal and State Requirements

4measd.doc = Measure D Requirements

5def.doc = Definitions

6stands.doc = Recycled Content Standards

7price.doc = Price Preferences

8bidcont.doc = Bid and Contracting Procedures

9users.doc = Meeting Internal Customers' (Users) Needs

10monit.doc = Monitoring Tools

11locate.doc = Locating Suppliers

12coop.doc = Cooperative Purchasing

13reduce.doc = Source Reduction

14rcopts.doc = Recycled Product Opportunities

15intprd.doc = Introduction to Recycled Product Examples

16bcf.doc = Binders, Copy Paper, Fiberglass Insulation

17fdpe.doc = File Storage Boxes, Flexible Delineator Posts,
Inter-Office Envelopes

18ptpst.doc = Paper Towels, Playground Surfaces,
Plastic Food Service Trays

19luolcp.doc = Plastic Lumber Benches, Re-Refined Lubricating Oil,
Soil Amendments-Compost

20clnag.doc = Trash Cans and Rolling Carts, Trash Can Liners,
Unbound Aggregates

isumclas.doc = Appendix I - Summary of Clauses

iiisource.doc = Appendix II - Research Sources

iiiiresrc.doc = Appendix III - Resources

read me = basic instructions and list of file names

ACKNOWLEDGMENTS

The Markets for Recycled Products project team thanks the Alameda County Source Reduction and Recycling Board for supporting the purchasing community by sponsoring this project. The team could not prepare this manual without valuable assistance and information from many people. We gratefully acknowledge the contributions from:

The Alameda County Source Reduction and Recycling Board staff
 Dana Arnold, Office of Solid Waste, U.S. Environmental Protection Agency
 Barbara Becker, Buyer II, Alameda County Purchasing Department
 Rick Best, Californians Against Waste
 Ralph Costa, Purchasing Manager, City of Hayward
 Mark Cullors, Project Manager, Alameda County Source Reduction and Recycling Board
 Beth Eckl, Recycling Coordinator, County of Alameda
 Albert Fernandes, Buyer, City of Alameda Bureau of Electricity
 Barbara Frierson, Recycling Coordinator, City of Alameda
 Brian Foran, California Integrated Waste Management Board
 Phyllis Gutierrez, Administrative Service Coordinator, City of Alameda
 Karen Hamilton, Recycled Product Analyst, King County, WA
 Jan Hansen, Purchasing Manager, City of Berkeley
 Jerry Hart, California Integrated Waste Management Board
 Sheila Hernandez, Senior Finance Assistant, City of Fremont
 Gary Holm, Deputy Director, County of Alameda, GSA Purchasing Department
 Kelly Ingalls, Los Angeles Integrated Solid Waste Management Office
 Richard Keller, Northeast Maryland Waste Disposal Authority
 Nadav Malin, Environmental Building News
 Fran McPoland, Federal Environmental Executive
 Ferial Mosely, Recycling Specialist, City of Oakland
 Eric Nelson, Recycled Product Procurement Coordinator, King County, WA
 Myra Nissen, Recycling Analyst, City of Fremont
 Norman Dean Ploss, Integrated Waste Management Engineer, City of Fremont
 Richard Ramer, Florida Department of Transportation
 Sharon Taylor, Buyer II, Alameda County Purchasing Department
 Judith Usherson, Eastern Research Group
 Staff of the California Integrated Waste Management Board
 Staff of the California Department of Conservation
 Staff of CalTrans
 Staff of the National Waste Prevention Coalition
 numerous product manufacturer representatives

Portions of the material in Chapters 8, 12 and 14 were derived with written permission from the Buy Recycled Training Manual, Fourth Edition, Copyright 1995, Northeast Maryland Waste Disposal Authority and the United States Conference of Mayors.

ORIGINAL REPORT MATERIALS

Paper	25% postconsumer content
Binder	25% postconsumer content plastic
Indexes	Avery 20% postconsumer content
Labels	removable "Remove 'Em" by Avery

For additional information, contact:

Susan Kinsella & Associates
4 Cielo Lane, #1B, Novato, CA 94949
fax/phone 415-883-6264 On-line SEEK251@AOL.COM

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION 1

 Buying for Source Reduction 1

 Buying Products with Recycled Content 2

 The Reason for the Manual 2

 The Sponsor 3

 Research Process 3

 Status of the Alameda County Program 4

 How to Use This Manual 4

 Acronyms and Abbreviations 6

CHAPTER 2 MODEL POLICY AND IMPLEMENTATION GUIDELINES 7

 Introduction 7

 Designing the Policy 8

 Statement of Purpose 9

 1.0 Statement of Policy 9

 2.0 Definitions 10

 3.0 Policy Implementation 10

 4.0 Precedence 10

 5.0 Reasonable Price 11

 6.0 Application 12

 7.0 Reports 12

 8.0 Responsibilities 13

 Designing the Implementation Guidelines 14

 3.0 Policy Implementation 14

 4.0 Precedence, Recyclability, Type Content 15

 5.0 Reasonable Price 15

 8.0 Responsibilities 16

 10.0 Purchasing Documents 16

 Model Policy 17

 Implementation Guidelines 23

CHAPTER 3 FEDERAL AND STATE REQUIREMENTS 35

 U.S. Environmental Protection Agency 35

 CPG Requirements for Local Agencies 35

 Designated Products 37

 Clarification of Recycled Content 38

 Federal Executive Order 38

 California State Law 39

 Public Contract Code 39

 Public Resource Code 41

 California Requirements for Local Agencies 43

 Complying With Federal and State Law 44

Sources of Information . . . . .	.46
CHAPTER 4 MEASURE D REQUIREMENTS	47
Source Reduction . . . . .	.47
Recycled Product Purchase Preference Program . . . . .	.47
Support for Programs . . . . .	.49
Flexibility in Measure D Requirements . . . . .	.50
CHAPTER 5 DEFINITIONS	53
Purpose of Definitions . . . . .	.53
Recommended Definitions . . . . .	.53
Issues. . . . .	.56
Measure D Definitions - Intent and Reality . . . . .	.56
Compatibility with State & National Laws . . . . .	.57
Source Reduction Products . . . . .	.58
Applicability Across Material Types . . . . .	.58
Importance of Postconsumer Focus . . . . .	.58
Need for Flexibility . . . . .	.59
Total Weight vs Fiber Weight in Paper . . . . .	.59
CHAPTER 6 RECYCLED CONTENT STANDARDS	61
Types of Standards . . . . .	.61
Types of Recycled Content in Standards. . . . .	.61
Postconsumer Only . . . . .	.62
Dual Standards . . . . .	.62
Recovered Material Only Standards . . . . .	.62
Setting Standards . . . . .	.63
Source of Standards . . . . .	.63
Recommended Standards for Product Examples . . . . .	.64
Standardizing Recycled Content Standards . . . . .	.65
Using Recycled Content Standards . . . . .	.65
Comparison of Recycled Content Standards . . . . .	.66
Certifications . . . . .	.69
Flexibility to Adjust Standards . . . . .	.69
Recommended Recycled Content Policy Clauses . . . . .	.69
Recommended Recycled Content Clauses for Bids . . . . .	.70
CHAPTER 7 PRICE PREFERENCES	71
Purposes of Price Preferences . . . . .	.71
California State Authorization . . . . .	.71
Price Preferences for Source Reduction Products . . . . .	.71
Experience with Price Preferences . . . . .	.72
Price Preference Amounts . . . . .	.72
Raising or Lowering Price Preferences . . . . .	.73
Flexibility . . . . .	.73
Doing Without Price Preferences . . . . .	.74
Recommended Price Preference Clauses . . . . .	.74

Getting Advice

.76CHAPTER 8 BID AND CONTRACTING PROCEDURES

77

Before Preparing Purchasing Documents77

 Evaluate Product per Hierarchy77

 Check List78

 Review Coop Purchasing Opportunities .79

 Review Research and Expand Vendor Base .79

 Prepare to Get Price Quotes79

Review and Revise Specifications80

 Typical Obstacles to Recycled Content .80

 Performance vs Design Specifications80

 Test Data80

 Qualified Product Lists80

 Brand Name of Equal Specifications81

 Packaging Specifications81

Insert Key Provisions in Specifications81

 Insert Reduction Requirements81

 Insert Recycled Content Standard81

Review and Revise Purchasing Document82

 Boilerplate82

 Policy Clause82

 All New Clause82

 All or None Requirements83

 Warranty Clause83

 Termination & Damage Provisions .83

 Inspection Clause83

 Packaging Clause84

 Recycled Product Additions84

 Definitions84

 Certification84

 Identification of Recycled Content.88

 Questionnaires88

 Price Preference Clauses88

 Delivery Timing88

 Labeling88

 Vendor Reporting89

Contractor and Grantee Requirements89

 Paper89

 Other Products and Practices90

 Reporting90

CHAPTER 9 MEETING INTERNAL CUSTOMERS' NEEDS91

 Educate Users about Your Program91

 Introducing A New Product.93

 Quality Control94

	Simple User Tests . . . . .	.94
	Resolve Problems Promptly	
.95	CHAPTER 10 MONITORING TOOLS . . . . .	.97
	Other Benefits . . . . .	.97
	Environmental Purchasing Data Requirements .98	
	Monitoring Methods . . . . .	.98
	Manual Method . . . . .	.98
	Automated Method . . . . .	.99
	Measure D Monitoring Requirements	101
	Reporting Progress for Other Reasons	104
	Using Monitoring Tools for Policy Analysis	106
	Recommended Vendor Report Clauses	107
CHAPTER 11	LOCATING SUPPLIERS AND ENHANCING COMPETITION . . . . .	.109
	Sources for Vendors	110
CHAPTER 12	COOPERATIVE PURCHASING . . . . .	.115
	Purposes of Cooperative Purchasing	115
	Types of Cooperative Purchasing	116
	Sources	117
	Recommended Clauses for Coop Purchasing	119
CHAPTER 13	SOURCE REDUCTION OPPORTUNITIES . . . . .	.121
	Definition	121
	Precedence	122
	Purchasing Source Reduction Products	122
	Reduce - Purchase Less to Save More	122
	Reuse - Keep a Good Thing Going	127
	Buy Remanufactured Products	128
	Practices That Reduce the Need for Products	129
	Eliminate Need for Specific Products	130
	Reuse Products	130
	Use Labels to Extend Product Life	130
	Use Salvage Operations	131
	Sell What You Can	131
	Donate What You Cannot Sell	132
	Consolidate and Use Products Completely	132
	Update Mailing Lists	133
	Think Minimum Impact	134
	Focus on Maintenance and Repair	135
	Reduce Packaging	135
	Buy for Recyclability	136
	Influence Others	137
	Ask for Suggestions.	138
	Get Specifics.	138

Keep Developing New Ideas

138CHAPTER 14 RECYCLED PRODUCT OPPORTUNITIES

.139

Do the Easy Things First 139

Build Your Local Economy 141

Recycled Products in the Marketplace Today 142

Available Recycled Products 143

CHAPTER 15 RECYCLED PRODUCT EXAMPLES.145

Products 145

Organization of Information 145

 Applications 145

 Attributes 146

 EPA Designation 146

 Recycled Content Standards 146

 Reduction Opportunities 146

 CSI Division 146

 Cost 146

 Specification Issues. 147

 Standard Specifications and Tests 147

 Adjusting Specifications 147

 Using Agencies and Usage Issues 147

 Sources 147

Binders 148

Copy Paper 154

Fiberglass Insulation 163

File Storage Boxes 167

Flexible Delineator Posts 173

Inter-Office Envelopes 177

Paper Towels 182

 Waste Savings for Roll Towels 186

Playground Surfaces 191

Plastic Food Service Trays. 196

Plastic Lumber Benches 201

Re-Refined Lubricating Oil 206

Soil Amendment - Compost 211

Trash Cans and Rolling Carts 216

Trash Can Liners 222

Unbound Aggregates 228

 Cullet Application Specifications 232

APPENDIX I SUMMARY OF CLAUSES 235

APPENDIX II RESEARCH SOURCES 245

APPENDIX III RESOURCES 247

Table of Contents for Resources	.	.	247
---------------------------------	---	---	-----

TABLES AND EXHIBITS

TABLES

1-I	Acronyms and Abbreviations	6
6-I	Recommended Recycled Content Standards for Fifteen Product Examples	64
6-II	Comparison of Recycled Content Standards	66
14-I	Available Recycled Products	143
15-I	Calculating Waste Savings for Roll Towels	186
15-II	Cullet Application Specifications	232

EXHIBITS

8-I	Purchasing Document Review Check List	78
8-II	Recycled Product Certification	86
8-III	Source Reduction Certification	87
10-I	Annual Report of Recycled Purchases for Price preference Reimbursement	101
10-II	Annual Report of Recycled Purchases	105
10-III	Annual Report of Source Reduction Purchases	105

CHAPTER 2

MODEL POLICY AND IMPLEMENTATION GUIDELINES

INTRODUCTION

“Policy” means the general set of official rules and values that create the framework for your program. It is usually endorsed as a law, ordinance, resolution, or other official statute by a jurisdiction’s executive body. It states the factors which are essential to the program and any other program aspects which the executive body does not want to leave to chance. However, the best policies create a clear and strong framework without incorporating rigid elements that eventually date the policy and make it difficult to carry out. Changing legalized policies is often a lengthy and involved process and may open the policy to unintended political alterations.

Implementation guidelines, on the other hand, go into great detail in explaining how to enact the program. They are internal guidelines which may be modified easily as needs change, as long as they remain faithful to the official policy.

An official and effective source reduction and recycled product purchasing policy makes a jurisdiction’s intent clear to vendors, contractors, suppliers, and constituents while providing support and direction for its buyers. A general policy that expresses strong commitment to the program’s goals but also allows reasonable flexibility, coupled with clear and detailed implementation guidelines, provides a solid foundation for a successful purchasing program. Such a foundation allows a program to be consistently implemented, rather than be dependent on individual staff commitment. It is the cornerstone to buying recycled.

This chapter includes a model policy and model implementation guidelines. These documents contain critical clauses for successful source reduction and recycled product purchasing programs. You can use these to craft documents that fit your individual jurisdiction’s needs. Some clauses may not be needed by all jurisdictions because their general purchasing regulations already contain key provisions.

Review Purchasing Laws

When initiating or revising a policy, start by reviewing your current purchasing policy regulations. Some of the authorizations and duties recommended for buying recycled, such as cooperative purchasing, price preferences and calculating ownership cost, may be part of your jurisdiction’s general purchasing policy.

Involve Purchasers

No matter who initiates policy development — policymakers, purchasers, recycling personnel, citizens or others — include purchasers and recycling personnel early in the discussions. This is critical because your experts can spot key problems and prevent major objections later. When purchasers are involved from the outset, they embrace the program goals as their own. Buyers can advise on the most effective way for the policy and regulations to function in your particular jurisdiction. Recycling personnel can ensure that policies support local and national markets.

Legal Review

When all parties have agreed on the framework and wording, legal counsel should review the proposed policy before submission for public review and governing body approval. The model policy and implementation guidelines in this chapter have been adapted from successful programs in many jurisdictions, including Alameda County, Oakland, Berkeley, Tucson, AZ and King County, WA, as well as the state of California and the federal government. However, legal circumstances vary and are specific to each local government.

DESIGNING THE POLICY

A successful program commonly requires both an official general policy and a set of internal guidelines or regulations that lay out the specifics of the policy. The general policy usually requires approval by the governing body or voters. It should clearly and strongly state the program's objectives and authorizations. In addition, it should allow enough flexibility to adapt to market conditions which change over time. Legal policies that include rigid details, such as specific minimum content standards, present problems to buyers as markets mature. However, a carefully worded general policy can ensure maximum success if it is strict enough to ensure adherence to the program's objectives and yet flexible enough to consider changing needs and market conditions.

The amount of flexibility allowed by a general policy is specific to the style in each jurisdiction. When the community and government staff strongly support policy objectives, you can allow maximum flexibility. When personnel are resistant, you will want to limit discretion to change price preferences and recycled content standards.

The following sections discuss the issues that shape the model policy in this manual. The numeric identifications refer to sections in the model. You will find additional information, including appropriate clauses for purchasing documents, in individual chapters and in Appendix I.

Statement of Purpose

Most laws and ordinances begin with an explanation and justification for the policy that follows. Buying source reduction and recycled products is part of developing a fully functioning recycling system on a local, state, national and global level. It provides many local benefits that you may want to emphasize. Depending on the style in your jurisdiction, your elected officials may want to highlight broader geographic and environmental benefits as well.

1.0 Statement of Policy

This is the core of the policy, from which all other clauses flow. It must clearly and uncompromisingly state the policy's objectives and any other key issues. In the model, the policy makes clear that the jurisdiction will: buy source reduction and recycled products; favor postconsumer recycled content; ensure that all equipment is compatible with this objective; and educate employees, suppliers and the public about the program. Your implementation guidelines will detail just how this will be accomplished.

The model policy combines procurement policies for source reduction products with policies for recycled products to consolidate and streamline the purchasing process. While source reduction purchasing raises issues not encountered in buying recycled products, the authorizations and duties are similar for each. You can find more detailed information on buying products in Chapter 13: Source Reduction Opportunities, Chapter 14: Recycled Product Opportunities and Chapter 15: Recycled Product Examples.

The model policy stresses using postconsumer material when practicable. While local government focus on postconsumer materials is essential, there are some recycled products that contain little or no postconsumer materials for valid reasons. The policy wording should allow purchase of these products while emphasizing postconsumer content for all others. See Chapter 5: Definitions for more information.

Purchasers and policymakers sometimes worry that a directive to buy recycled products will automatically increase their jurisdiction's expenditures or decrease their ability to effectively provide quality products. The policy statement should state that reasonable quality, price and delivery time will not be jeopardized.

2.0 Definitions

You should define in this section all key terms in the document that may be open to interpretation and then use the terms consistently in the policy, implementation guidelines and purchasing documents. The model policy definitions are based on the best version of local, state and federal definitions. They combine both strict requirements to promote market development and flexibility to meet changing market realities. The definitions are compatible with the objectives of the Alameda County Measure D but eliminate overly-rigid aspects such as specific recycled content requirements and content definitions which do not meet today's needs. Refer to Chapter 5: Definitions for a discussion of the differences.

The model policy uses a generic reference to "Director of Procurement" but this responsibility may fall to different executive positions such as the City Manager, Director of Finance, Budget Director or positions with similar responsibility within your own jurisdiction, especially in decentralized purchasing systems. The generic reference to "Department of Solid Waste" means the department in your jurisdiction which is responsible for recycling and source reduction. An employee with responsibility for overall program research in such a department, such as a Recycling Coordinator, may be able to provide the most effective market data and overview for the purchasing program.

3.0 Policy Implementation

Since general policy is not complete without detailed instructions on how to carry out its directives, this section authorizes departments and staff positions to determine key details and to carry out the terms of the policy.

In some cases, you may want to allow the lead authority to delegate some of the responsibilities to an authorized representative. In other cases, you will want to hold that staff position solely responsible for implementing particular aspects of the policy. In this section you should state explicitly who has discretion in implementing the policy and what the parameters of that discretion are. In the corresponding section in the implementation guidelines, the departments and staff positions named in this section will define the process for putting the policy into action. Promotion of the policy and education for buyers and suppliers are also critical. The implementation guidelines stress this objective.

4.0 Precedence

There are several situations in which buyers may encounter conflicts in choosing which type of product is preferable according to the policy. This is likely to occur when a buyer could choose either a source reduction product or a recycled product. It could occur in some instances between competing recycled products, as well. This section of the model policy clarifies how the jurisdiction wishes

buyers to make choices in such instances. It also explicitly authorizes buyers to consider the total ownership cost of a product when appropriate.

Jurisdictions may also want to clarify precedence when they give preference to local vendors, minority, women-owned or other types of businesses in addition to recycled products. In some cases, recycled products may not be available from the supplier categories given preference in your jurisdiction. When policies conflict, buyers need to know how to make decisions.

5.0 Reasonable Price

The policy directs buyers to purchase source reduction and recycled products when they “are available at a reasonable price.” Such wording is preferable to alternatives such as “when prices are equal” or when the designated products are “lowest cost” because it allows more flexibility for fulfilling the policy or for changing circumstances over time. Many factors coalesce in determining the actual purchase price of a product, such as quantity, location, delivery schedules and discount structures. Source reduction products may provide valuable benefits that are difficult to compare financially to their alternatives. Requiring recycled products to equal or beat the cost of nonrecycled products every time limits the effectiveness of the policy. “Reasonable price” allows a jurisdiction to use sophisticated procurement strategies and to revise the implementation techniques as needed.

Nevertheless, most jurisdictions rightfully want to control the financial impact of a policy. They can define “reasonable price” in many different ways. The model policy presents options for three different approaches:

- **Authorizing buyers to specify only recycled products** in appropriate circumstances, without price comparison to nonrecycled alternatives, and to choose source reduction products whenever feasible. The federal government and many state and local governments have decided that their commitments to full-cycle recycling require them to focus on recycled products whenever possible. They reason that such a purchasing policy will result in meaningful benefits that cannot always be attributed to price alone.
- **Allowing use of a price preference.** There are different ways to implement this option, including firm percentages and/or flexibility to adjust price preference percentages according to market conditions. See Chapter 7: Price Preferences for details.
- **Allowing some carefully constrained flexibility** in price comparisons even in jurisdictions that usually adhere to lowest cost requirements.

If you truly want buyers to choose only products with the lowest price, this is the section in which to state that directive.

In jurisdictions in which “reasonable price” has a cap, such as those using price preferences or lowest price, you should consider allowing discretion in situations in which a small expenditure would create a significant increase in buying source reduction or recycled products. The model policy and guidelines include language for each option. More information is available in Chapter 7: Price Preferences.

6.0 Application

This section clarifies who is subject to the policy. A jurisdiction’s purchasing power generally extends far beyond the staff people who are formally called “buyers.” Decentralized purchasing systems usually delegate buying to many different staff positions, most of whom may not consider themselves “buyers” because purchasing is not the main focus of their jobs. Most local governments now authorize most or all staff to buy supplies under a prescribed monetary ceiling. This may account for most office supplies used by a decentralized jurisdiction. In this case, all staff people need to be aware of the purchasing policy and how to implement it.

A jurisdiction’s buying power extends outside its own offices as well. Contractors may buy the bulk of the products and materials used in the public works department. Printers and copy companies may buy a significant amount of the paper. These contractors, too, should be subject to the purchasing policy when they are providing products paid for with jurisdiction dollars.

Vendors and suppliers may already report source reduction and recycled product data so that the jurisdiction can compile information about its program implementation. Contractors and grantees may not be able to provide as much detail on their product usage as a vendor whose business it is to sell the products, but they should be able to provide estimates to assist in reporting and to verify their compliance with the jurisdiction’s policy.

7.0 Reports

Periodically, a jurisdiction will want to assess its source reduction and recycled product purchasing policy. Policymakers need information to track the success of the policy and to substantiate any changes or adjustments that may be needed. Buyers may need to compare data from previous years to evaluate changing market conditions. The jurisdiction’s constituents may want to know how well their government carries out its commitment to environmental products.

At the same time, with staff and resources in most jurisdictions stretched to the limit, detailed reporting may be impossible. The jurisdiction can still gather

substantive and useful information by reporting about broad categories and by requiring vendors to report about products they supplied throughout the reporting period. See Chapter: 10 Monitoring Tools for a discussion of how you can meet this requirement without overburdening staff and resources.

Most jurisdictions require annual reports, although you may want more frequent information. Purchasers evaluate policies at the end of the fiscal year. That may be a good time to ask for a report on the source reduction and recycled product program as well. No matter what time schedule works best for your jurisdiction, those who will contribute to the final report, such as vendors and buyers, will need time to compile the information. The executive responsible for the report also needs time to coordinate results. You should allow at least six months following the close of your fiscal year when setting report deadlines.

8.0 Responsibilities

It is helpful to all those affected to summarize the implementation responsibilities. The general policy should state which departments, offices and agencies have principal responsibilities. The implementation guidelines will define what those duties are.

DESIGNING THE IMPLEMENTATION GUIDELINES

You should detail the exact steps to achieve the policy's directives in the implementation guidelines. These are written to reflect a particular jurisdiction's structure, procedures, and realities and can be changed without political action as long as they remain faithful to the general policy's directives and authorizations. This is where you should include specific listings about minimum recycled content or other details which may change over time. Each jurisdiction will want to write its own guidelines. The model guidelines show what to include.

All those with responsibilities to fulfill in carrying out the recycled and source reduction product procurement policy should participate in designing the implementation guidelines. The general policy should state who is responsible for leading the effort and which agencies will assist.

The implementation guidelines are the working documents that put policies into practice. They detail responsibilities and steps to be taken. Implementation guidelines can be much more specific than policies because guidelines can be changed as needs and circumstances change.

You will find discussions of issues behind many of the guidelines in Chapter 6: Recycled Content Standards, Chapter 8: Bid and Contracting Procedures and Chapter 12: Cooperative Purchasing.

The model implementation guidelines in this chapter follow the structure of the model policy. They include methods to stay up-to-date. It is a good idea to quote key policy statements and definitions in the guidelines so that individuals can work from a single document.

The preceding model policy discussion includes explanations of each section. A few sections merit special discussion here.

3.0 Policy Implementation

Education, or policy promotion, is stressed in this section because without it the policy will not be carried out effectively. There should be different types of education. Users should see notifications of recycled content on recycled products whenever feasible. Purchasing and recycling personnel should inform buyers, vendors, suppliers and contractors whenever necessary about buying source reduction and recycled products. Buyers in a decentralized system can learn policy requirements through flyers, newsletters, seminars or other training venues. Education may mean giving buyers the opportunity to attend seminars put on by outside buy-recycled trainers. Vendors must be notified that the jurisdiction intends to buy recycled products and which types of products and recycled content would qualify. The education component need not require extensive resources, but those responsible for "promoting" should use all

available means to educate others who are responsible for implementing the policy.

4.0 Precedence, Recyclability and Type of Recycled Content

The guidelines direct buyers, before seeking bids, to evaluate the capacity to recycle a product and its packaging through existing recycling collection programs. This refers to cases in which a product may meet the recycled content standards but not be recyclable in your jurisdiction. A nonrecyclable product may result in revenues lost from sale of collected recyclables, contamination to the existing recyclable collection stream, increased costs for recycling separately or for disposal, and environmental costs. If a buyer decides that purchase of the product does not justify these potential costs, and that other comparable recycled products exist which are recyclable, the purchasing documents should indicate that the product must be recyclable in existing jurisdiction systems.

In other cases, however, there may be reasons to accept a nonrecyclable product. There may be no comparable product which is recyclable. The product in question may be more durable than comparable products and therefore less likely to result in either recycling or disposal. It may reduce waste to such a degree that its use is preferable to another product. In such cases, a buyer may choose not to require recyclability.

The guidelines also refer to a situation in which the products bid do not meet the total recovered material requirement in recycled content specifications. Markets are volatile so manufacturers may not always find sufficient amounts of preconsumer material to meet specifications. However, they may be able to offer significantly higher postconsumer levels than specified. In some cases, manufacturers focus only on postconsumer content. The implementation guidelines authorize accepting the high postconsumer content product as a better choice, if the purchasing document contains notice of how this situation will be resolved.

5.0 Reasonable Price

When a jurisdiction offers a price preference for recycled products, bidders must have a way to evaluate the cost of recycled products compared with equivalent virgin products. Therefore, buyers should obtain prices for both recycled and nonrecycled alternatives. This information is needed to evaluate bids for price preferences and also to report the use of price preferences. See Chapter 10: Monitoring Tools, for details. Nevertheless, bidders should be allowed to make responsive bids which may include prices for only recycled or only virgin products, since some vendors may not carry both.

8.0 Responsibilities

Implementation guidelines should include a listing of which staff positions are responsible for what tasks. This clarifies the work that must be completed and assures that everyone knows exactly what they must do.

10.0 Purchasing Documents

This section in your implementation guidelines provides bid and purchasing clauses for buyers to use. Each jurisdiction would insert its own. See Chapter 8: Bid and Contracting Procedures. Appropriate bid clauses are also contained in other chapters throughout the manual. Appendix I: Summary of Clauses puts all recommended policy and purchasing document clauses in one handy reference section.

There is nothing more confusing to vendors than bid clauses that conflict with each other. Buyers must ensure that old clauses are deleted or adjusted when new clauses are added.

Brackets, [], in the following model policy and implementation guidelines indicate variable information, examples to clarify statements or instructions to people designing their own documents. Brackets also show where one of several options identified by small case letters should be chosen.

MODEL PROCUREMENT POLICY FOR RECYCLED AND SOURCE REDUCTION PRODUCTS

STATEMENT OF PURPOSE [Optional]

The [jurisdiction] supports the preservation of natural resources and reduction of energy use and pollution through development of a sustainable manufacturing production system,

recognizes the need to strengthen markets for materials collected in local recycling collection systems,

desires to maximize reduction of discarded materials,

encourages economic development through attracting and retaining recycled and source reduction product manufacturers and distributors,

affirms the California state goal of diverting 50% of waste by 2000,

and complies with California state law which requires local agencies to buy recycled products and which allows local agencies to adopt purchasing preferences for recycled products.

1.0 STATEMENT OF POLICY

1.1 It is the policy of [jurisdiction] to purchase source reduction products and/or recycled products containing the highest amount of postconsumer material practicable or, when postconsumer material is impracticable for a specific type of product, containing substantial amounts of recovered material. Such products must meet reasonable performance standards, be available at a reasonable price and be available within a reasonable time.

1.2 All equipment bought, leased or rented shall be compatible with the use of source reduction and recycled products.

1.3 [Jurisdiction] shall promote its use of source reduction and recycled products whenever feasible.

2.0 DEFINITIONS

2.1 “Buyer” means anyone authorized to purchase on behalf of the jurisdiction or its subdivisions.

- 2.2 “Contractor” means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor or other entity that has a contract with [jurisdiction] or serves in a subcontracting capacity with an entity having a contract with [jurisdiction] for the provision of goods or services.
- 2.3 “Ownership Cost” means total ownership costs during a product’s life cycle, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.
- 2.4 “Postconsumer Material” means a finished material which would normally be disposed of as a solid waste, having completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.
- 2.5 “Preconsumer Material” means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.
- 2.6 “Price Preference” means the percentage allowance for a recycled product that costs more than a comparable virgin product. In bid situations, it is the percentage above the lowest cost of a comparable virgin product allowed for a recycled product when both bidders are responsible and responsive.
- 2.7 “Purchasing Documents” mean all documents used to solicit bids and purchase products, including but not limited to: invitations for bids, requests for proposals, requests for quotations, and purchase orders.
- 2.8 “Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material, but does not include excess resources of the manufacturing process.
- 2.9 “Recycled Content” means the percentage of recovered material, including preconsumer and postconsumer materials, in a product.

- 2.10 “Recycled Content Standards” means the minimum or maximum level of recovered material and/or postconsumer material necessary for products to qualify as “recycled products,” as established by [jurisdiction].
- 2.11 “Recycled Product” means a product that meets [jurisdiction’s] recycled content policy objectives for postconsumer, preconsumer and recovered material.
- 2.12 “Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.
- 2.13 “Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.
- 2.14 “Source Reduction Product” means a product that results in a net reduction in the generation of waste compared to the previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

3.0 POLICY IMPLEMENTATION

- 3.1 The [Director of Procurement¹ or authorized representative] shall, in cooperation with [the Department of Solid Waste²] and any other relevant departments, offices or agencies], develop administrative guidelines to implement this policy.
- 3.2 The [Director of Procurement or authorized representative] shall ensure that purchasing documents, specifications, and contracting procedures do not discriminate against source reduction or recycled products.
- 3.3 The [Director of Procurement] shall establish recycled content standards and is authorized to raise or lower them to meet the objectives of this policy. The decision to change any recycled content standard shall be substantiated in the annual report.

3.4 The [Director of Procurement] is authorized to exempt product categories from this policy in cases when all products contain recycled content [such as metals], or when health or safety may be jeopardized [such as pharmaceuticals] or when multiple complex components or the nature of the product make certification of recycled content impracticable [such as automobiles, computers, and software]. The [Director of Procurement] shall maintain a list of products exempted from this policy.

3.5 The [purchasing entity] is authorized to participate in, and encourage other public jurisdictions to participate in, cooperative purchasing agreements.

4.0 PRECEDENCE

4.1 When conflicts occur in product selections, the following hierarchy shall be used:

- reduction in quantity, volume, weight or toxicity;
- reusability;
- recycled content.

Buyers shall maximize this hierarchy whenever possible. Products shall also be evaluated for recyclability.

4.2 All [jurisdiction] departments, offices and agencies may evaluate environmental benefits and ownership cost when evaluating prices to determine the lowest responsible bid.

5.0 REASONABLE PRICE

[For jurisdictions authorizing buyers to specify only recycled products in appropriate cases]:

5.1a Buyers shall buy recycled and source reduction products whenever possible.

[Or, for jurisdictions implementing a price preference for recycled products]:

5.1b This policy establishes a price preference of up to [percent] for products that contain at least the minimum of recycled content specified.

[Optional but recommended flexibility for jurisdictions implementing a price preference policy]:

- 5.2 The [Director of Procurement] is authorized to purchase recycled products when the price differential is higher than the price preference allows when the [Director of Procurement] determines in writing that the additional cost is reasonable and in the best interests of [jurisdiction].
- 5.3 The [Director of Procurement] is authorized to raise or lower the price preference up to [insert percentage] for recycled product categories in response to market conditions. The decision to change the price preference shall be substantiated for each product category. [See Chapter 7: Price Preferences — Flexibility for information about the percentage.]

[For jurisdictions giving no authorization for recycled-only purchasing or for a price preference, but willing to spend slightly more for recycled products in specified circumstances]:

- 5.1c On a case-by-case basis, the [Director of Procurement] is authorized to purchase recycled or source reduction products at more than the lowest cost when the following conditions are met:
- a. the price differential is no greater than [insert percent or dollar amount] over nonrecycled or non-source reduction products,
 - b. the bidder is responsive and responsible,
 - c. the [Director of Procurement] determines in writing that the additional cost is in the best interests of [jurisdiction], and
 - d. no substantial budget impact would result.

6.0 APPLICATION

- 6.1 All [jurisdiction] departments, offices, agencies, contractors and grantees shall comply with this policy.

7.0 REPORTS

- 7.1 The [Director of Procurement or authorized representative] shall report to the [jurisdiction's governing board] annually, for both recycled and source reduction purchases, annual dollar expenditures, % change from previous years, % represented of total purchasing budget, total savings or cost for using recycled or source reduction purchases, and the number of product types bought in each category. The annual report shall also include identification and discussion of instances in which this policy has been waived or found impracticable, a discussion

of other barriers to the procurement of recycled products, and any instances when recycled content standards or price preferences were adjusted.

[Individual jurisdictions should adjust this list to fit their information needs and reporting capabilities.]

8.0 RESPONSIBILITIES

8.1 The [Director of Procurement¹] shall work with [the Department of Solid Waste² and any other relevant departments, offices or agencies] to implement this policy.

9.0 EFFECTIVE DATES

9.1 This policy shall take effect on [date].

9.2 The [Director of Procurement] shall issue implementation guidelines within one year following the effective date of this policy.

NOTES

¹ The lead responsibility may be carried by different positions in different jurisdictions. Especially in decentralized systems, the lead entity may be the City Manager, Director of Finance, Budget Director, Solid Waste Director, or similar positions.

² “Department of Solid Waste” refers to the department within an individual jurisdiction that is responsible for recycling and source reduction.

**IMPLEMENTATION GUIDELINES FOR
SOURCE REDUCTION AND RECYCLED PRODUCT
PROCUREMENT POLICY****1.0 STATEMENT OF POLICY**

- 1.1 It is the policy of [jurisdiction] to purchase source reduction products and/or recycled products containing the highest amount of postconsumer material practicable or, when postconsumer material is impracticable for a specific type of product, containing substantial amounts of recovered material. Such products must meet reasonable performance standards, be available at a reasonable price and be available within a reasonable time.
- 1.2 All equipment bought, leased or rented shall be compatible with the use of source reduction and recycled products.
- 1.3 [Jurisdiction] shall promote its use of source reduction and recycled products whenever feasible.

2.0 DEFINITIONS

[Jurisdictions should repeat here the definitions contained in their general policy.]

3.0 POLICY IMPLEMENTATION

- 3.1 The [jurisdiction Director of Procurement¹], in cooperation with the Department of Solid Waste²] and relevant departments, offices and agencies] shall aggressively implement the [jurisdiction] Source Reduction and Recycled Product Procurement Policy.
- 3.2 All departments, offices and agencies shall evaluate their product specifications and remove all obstacles feasible to buying recycled and source reduction products. Among the obstacles to be removed are:
 - requirements for virgin materials only,
 - language that excludes recycled products,
 - unnecessary qualifications (e.g. high brightness levels for paper),
 - specifications written to describe particular nonrecycled products,
 - performance standards unrelated to actual need,

- “new” requirements that exclude remanufactured, reused or recycled content products.

- 3.3 Performance standards must be reasonable and related to operational need, and shall be designed to encourage the purchase of source reduction and recycled products.
- 3.4 Purchasing documents shall be structured to eliminate obstacles to buying source reduction and recycled products.
- 3.5 Purchasing documents that require vendors to supply “all or none” of the products sought, or variations thereof, shall be eliminated wherever feasible when recycled or source reduction products are an option.
- 3.6 The [Director of Procurement or authorized representative] shall establish and maintain recycled content standards for the purchase of recycled products that meet the intent and objectives of this policy and update them as market conditions require. [Note: Many jurisdictions have established recycled content standards. You can use those from federal, state, and local programs which are consistent with your policy to compile your jurisdiction’s list. See Chapter 6: Recycled Content Standards for details.]
- 3.7 Buyers shall specify recycled content standards, as established by the [Director of Procurement or authorized representative], in applicable bid solicitations and purchasing opportunities.
- 3.8 The [Director of Procurement] shall maintain a list of product categories exempt from this policy. [Insert list of exempt categories.]
- 3.9 When no recycled content standards exist, buyers shall purchase products with the highest percentage of postconsumer materials practicable, as long as performance and availability meet requirements and price is reasonable within the parameters of this policy. In cases when products cannot technically contain postconsumer material, or insufficient postconsumer materials are available to meet manufacturing demands, buyers can substitute the highest practicable amount of preconsumer material. When necessary to match national, state or [jurisdiction] policies, buyers may seek products with both postconsumer and preconsumer materials.
- 3.10 Purchasing documents shall request identification of recycled content (recovered and postconsumer materials, as applicable) for products whenever feasible.
- 3.11 Bids shall state that bidders’ failure to provide recycled content information shall mean zero recycled content.

- 3.12 The percentage of postconsumer and total recovered materials content in paper products shall be determined by fiber weight. Total product weight shall be used for all other types of products. For products with varying surface treatments, such as insulation, total product weight shall refer to only the core materials.
- 3.13 Bidders shall be requested to minimize packaging to the greatest extent practicable. Individual buyers shall encourage vendors to reduce packaging as much as possible.
- 3.14 Bidders shall be encouraged to offer source reduction product alternatives if they can substantiate the source reduction benefits.
- 3.15 Successful bidders shall be required to certify the percentage content of postconsumer and/or total recovered material, as specified, in products to be purchased. Individual buyers should make every effort to confirm recycled content information when seeking telephone or faxed quotes or direct purchases.
- 3.16 Buyers shall insert recycled content certification forms in all appropriate purchasing documents for non-exempt product categories. [See Chapter 8: Bid and Contracting Procedures for a sample certification form and Chapter 14: Recycled Product Opportunities for suggestions about exempt categories.]
- 3.17 Claims of source reduction in the manufacture or use of any product shall be certified. [See Chapter 8: Bids and Contracting Procedures for a sample certification format.]
- 3.18 Buyers shall justify in writing purchases of nonrecycled or non-source reduction products to the [Director of Procurement or jurisdiction executive], who may waive in writing a requirement of this policy when he/she determines justification supports such a waiver and it is in the best interests of [jurisdiction]. In those instances where it is deemed impracticable to procure a source reduction or recycled product, a specific explanation for the exclusion must be included in the purchasing record. [Insert jurisdiction procedure to apply for a waiver.]
- 3.19 The [Department of Solid Waste] shall advise the [Director of Procurement] when changes such as price preference percentage, recycled content standards, specifications or procedures may be necessary to help develop or stabilize markets.

3.20 Equipment purchased or rented by [jurisdiction] shall be compatible, whenever practicable, with the use of source reduction and recycled products. Examples:

- copiers with the default set to double-sided copying
- copiers that guarantee compatibility with recycled products, including paper and laser toner cartridges

If deemed impracticable, a specific reason for using incompatible equipment must be included in the purchasing record.

3.21 All departments, offices, and agencies shall ensure that they and their contractors use both sides of paper sheets whenever practicable.

3.22 Whenever practicable, recycled products shall be labeled as such in a standard format. Example:

- Printed pieces and copies, including letterhead and business cards, shall carry the following notation:
Printed on recycled paper.

3.23 All [jurisdiction] vendors, contractors, and service providers shall be notified of this requirement to label or otherwise designate recycled products as such at the time competitive bids or proposals are solicited and at other appropriate opportunities. Grant applicants shall be notified of this requirement early in the grant application process.

3.24 Buyers are authorized to participate in, and encourage other public jurisdictions to participate in, cooperative purchasing agreements which meet the objectives of this policy.

3.25 The [Director of Procurement or authorized representative], [Department of Solid Waste] and [relevant departments, offices and agencies] shall cooperate in hosting or publicizing seminars, workshops, trainings and bidders meetings to promote [jurisdiction's] policy.

3.26 The [Director of Procurement or authorized representative], in cooperation with the [Department of Solid Waste], shall educate buyers on issues relevant to buying source reduction and recycled products whenever necessary and appropriate.

3.27 Buyers shall educate vendors, suppliers, and contractors on issues relevant to source reduction and recycled products whenever necessary and appropriate.

3.28 [Insert any other methods appropriate to your jurisdiction.]

4.0 PRECEDENCE

4.1 When conflicts occur in product selections, the following hierarchy shall be used:

- reduction in quantity, volume, weight or toxicity;
- reusability;
- recycled content.

Buyers shall maximize this “reduce, reuse, recycle” hierarchy whenever possible. Products shall also be evaluated for recyclability.

4.2 Whenever possible, buyers shall combine the hierarchy components to achieve the greatest environmental benefit possible. Example:

- It may be better to replace a recycled product with a reusable product. An even better choice would be a reusable product that also has recycled content.

4.3 Before seeking bids, buyers should evaluate the capacity to reuse, recondition or recycle a product and its packaging through existing recycling collection programs. If a product is not recyclable, buyers should evaluate whether the costs of disposal correspond beneficially with the ownership costs and environmental benefits. In some cases, a product may not qualify for purchase because it is not compatible with [jurisdiction’s] recycling system.

4.4 When no bidder meets the specified minimum recycled content standard, buyers may purchase the product with the highest percentage of postconsumer content or, when postconsumer content is not practicable, the highest percentage of recovered material. This can only occur when the purchasing document explains it as a method for contract award.

- 4.5 When both recovered material and postconsumer material are specified, buyers may accept the lowest cost bid that offers a substantially higher amount of postconsumer content than the specification requires but does not meet specified recovered material requirements, even when other bidders meet the specification in the purchasing document. This can only occur when the purchasing document explains it as a method for contract award.

[See Chapter 6: Recycled Content Standards, Minimum (Maximum) Recycled Content Requirements, for an appropriate clause.]

- 4.6 Buyers shall have the flexibility to evaluate environmental benefits and ownership costs when evaluating prices to determine the lowest responsible bid. Buyers shall compare, in appropriate cases, the ownership costs of competing products. Purchasing documents must specifically explain this as a method for contract award.

5.0 REASONABLE PRICE

[For jurisdictions authorizing buyers to specify only recycled products in appropriate cases]:

- 5.1a Buyers shall buy recycled and source reduction products whenever possible.

- 5.2a Purchasing documents shall specify recycled and/or source reduction products whenever feasible.

[For jurisdictions implementing a price preference for recycled products]:

- 5.1b Buyers may apply a price preference of up to [percent] for products that contain at least the minimum of recycled content specified.

- 5.2b Purchasing documents shall request prices for both recycled and nonrecycled alternatives and bidders shall be allowed to offer prices for either alternative, or for both.

[Optional but recommended flexibility for jurisdictions implementing a price preference policy]:

- 5.3 The [Director of Procurement] is authorized to purchase recycled products when the price differential is higher than the price preference allows when the [Director of Procurement] determines in writing that the additional cost is reasonable and in the best interests of [jurisdiction].
- 5.4 The [Director of Procurement] is authorized to raise or lower the price preference percentage up to [insert percentage] for recycled product categories in response to market conditions. The decision to change the price preference shall be substantiated for each product category.
- 5.5 Buyers may apply to the [Director of Procurement] for authorization to exceed the [include percent] price preference if the additional expenditure, above the price preference, is no greater than [%, \$ amount, or jurisdiction's policy]. [Insert procedures to apply.]

[For jurisdictions giving no authorization for recycled-only purchasing or for a price preference, but which are willing to spend slightly more for some recycled products in specified circumstances]:

- 5.1c On a case-by-case basis, the [Director of Procurement] is authorized to purchase recycled or source reduction products at more than the lowest cost when the following conditions are met:
 - a. the price differential is no greater than [insert percent or dollar amount] over nonrecycled or non-source reduction products,
 - b. the bidder is responsive and responsible,
 - c. the [Director of Procurement] determines in writing the additional cost is in the best interests of [jurisdiction], and
 - d. no substantial budget impact would result.
- 5.2 Buyers may apply to the [Director of Procurement or authorized representative] for authorization for the additional expenditure. [Insert procedure to apply.]

6.0 APPLICATION

- 6.1 All [jurisdiction] departments, offices, agencies, contractors and grantees shall comply with this policy.
- 6.2 Purchasing documents shall include requirements for successful contractors and grantees to comply with this purchasing policy.
- 6.3 Purchasing documents shall specify that contractors and grantees must report [insert when, to whom] the estimated quantities of source reduction and recycled products with the percentage(s) of postconsumer and/or total recovered materials for applicable products used to complete [jurisdiction's] contracts and grants. Use of nonrecycled or non-source reduction products requires justification.

7.0 REPORTS

- 7.1 The [Director of Procurement or authorized representative] shall report to the [jurisdiction governing board] annually, for both source reduction and recycled purchases, annual dollar expenditures, % change from previous years, % represented of total purchasing budget, total savings or cost for using source reduction or recycled purchases, and the number of product types bought in each category. The annual report shall also include identification and discussion of instances in which this policy has been waived or found impracticable, a discussion of other barriers to the procurement of recycled products and any instances when recycled content standards or price preferences were adjusted. [Individual jurisdictions should adjust this list to fit their information needs and reporting capabilities.]
- 7.2 Buyers shall obtain quotes for comparable recycled and nonrecycled items to fulfill reporting requirements.
- 7.3 Buyers shall establish virgin prices on a case-by-case basis at the time of the bid:
 - On annual contracts, agreements and/or blanket orders, request both virgin and recycled product pricing during the bidding process;
 - On annual contracts, agreements and/or blanket orders, if asking for recycled products only, survey the market for virgin product prices by contacting at least three suppliers at the time of establishing the annual contract;

- For items not covered by annual contracts, agreements and/or blanket orders, either request both virgin and recycled product pricing during the bidding process or survey the market for virgin product prices by contacting at least three suppliers;
 - If buyers do not, or cannot, obtain prices for virgin counterparts, the recycled product is to be considered the low cost alternative and no price preference applies.
- 7.4 Buyers may specify in purchasing documents that vendors are required to furnish annual vendor reports by [date] indicating the quantity, dollar amount, percentage(s) and type(s) of recycled content for all products furnished to [jurisdiction].
- 7.5 All departments, offices and agencies shall submit reports to the [Director of Procurement] by [date].

8.0 RESPONSIBILITIES

[Director of Procurement¹], in cooperation with [Department of Solid Waste²]:

- 8.1 Designate products to be evaluated and processes and procedures to be used or adopted by departments, offices and agencies. Periodically transmit this information to departments, offices and agencies for implementation.
- 8.2 Provide departments, offices and agencies with information to facilitate their evaluation and purchase of source reduction and recycled products, inform them of their responsibilities under this policy, and provide technical assistance in policy implementation.
- 8.3 Host or publicize seminars, workshops, trainings and bidders meetings to promote [jurisdiction's] policy; educate buyers on issues relevant to buying source reduction and recycled products.
- 8.3 Establish and revise recycled content standards as necessary to ensure that recycled products purchased under this policy contain the maximum practicable amount of postconsumer and recovered material and are consistent with guidelines and regulations promulgated by the United States Environmental Protection Agency, the State of California, and other Federal, State and local agencies.
- 8.4 Maintain a list of current recycled content standards for appropriate recycled products.

- 8.5 Transmit recycled content standards to all departments, offices and agencies.
- 8.6 Maintain a list of exempt product categories.
- 8.7 Assemble an annual report to the [jurisdiction governing board] on the status of policy implementation.

[Jurisdiction] Departments, offices and agencies:

- 8.8 Ensure that contracting procedures do not discriminate against source reduction and recycled products without approved written justification.
- 8.9 Assign personnel to evaluate appropriate source reduction and recycled products to determine the extent to which each may be practicably used by the agency and its contractors.
- 8.10 Revise purchasing procedures to maximize the specification of source reduction and recycled products whenever practicable and facilitate compilation of data on the purchase of such products by the agency and its contractors.
- 8.11 Transmit evaluation results and procurement data to the [Director of Procurement] by [date] each year for inclusion in the annual report to the [jurisdiction governing board] on the status of policy implementation.

[Department of Solid Waste]:

- 8.12 Monitor market pricing for recyclable feedstocks and finished recycled products in order to advise the [Director of Procurement] when changes such as price preference percentage, recycled content standards, specifications or procedures may be necessary to help stabilize markets.

9.0 EFFECTIVE DATES

- 9.1 This policy shall take effect on [date].

10.0 PURCHASING CLAUSES

[For jurisdictions that cannot generate purchasing documents through their software]:

- 10.1 The following clauses were approved for use by [Director of Procurement] on [insert effective date] for use in standard terms and conditions. Review all new purchasing documents carefully to be certain that all parts of the document, including specifications, meet the intent of these clauses.

[Insert clauses for standard terms and conditions.]

- 10.2 The following special clauses were approved by [Director of Procurement] on [insert effective date]. Review all new purchasing documents carefully to be certain that outdated clauses are removed or revised as necessary.

[Insert bid clauses for the various types of purchasing documents affected. State the type of document, then list the clauses with the specific circumstances when the clause applies.]

[For jurisdictions that generate purchasing documents with their software]:

- 10.1 Appropriate source reduction and recycled product bid clauses have been developed for use by buyers. These are updated periodically. Review the clauses in standard terms and conditions and in special terms and conditions for the latest update before developing purchasing documents. Carefully review all new purchasing documents to be certain that outdated clauses are removed when new clauses are inserted.

[Insert the source from which to obtain relevant bid clauses. Be certain there is a mechanism to state the most recent update. Explain where to find clauses for each type of purchasing document used by your jurisdiction.]

NOTES

¹ The lead responsibility may be carried by different positions in different jurisdictions. Especially in decentralized systems, the lead entity may be the City Manager, Director of Finance, Budget Director, Solid Waste Director, or similar positions.

² “Department of Solid Waste” refers to the department within an individual jurisdiction that is responsible for recycling and source reduction.

**Good policies
set the stage
for success.**

CHAPTER 3 FEDERAL AND STATE REQUIREMENTS

Both federal and state laws and regulations affect local governments. Local purchasing officers can use federal and state guidance to help build their own programs while they assure compliance with legal mandates.

U.S. ENVIRONMENTAL PROTECTION AGENCY GUIDELINES

EPA regulations have the force of law. Issued in response to Section 6002 of the 1976 Resource Conservation and Recovery Act (RCRA) and the Executive Order 12873 signed by President Clinton on October 20, 1993, the Comprehensive Procurement Guideline (CPG) is codified as Part 247, Title 40 of the Code of Federal Regulations. A Recovered Materials Advisory Notice (RMAN) accompanies the CPG.

EPA revised its existing recycled product guidelines on May 1, 1995 in the new CPG and accompanying RMAN. The CPG designates 24 products containing recovered materials that government agencies must buy, describes who is affected by the regulations and defines specific terms.

The RMAN recommends procurement practices and describes recycled content requirements. EPA states its belief that meeting RMAN recommendations will achieve compliance with the law but procuring agencies may adopt other procurement programs that are consistent with RCRA Section 6002.

EPA will propose a new CPG and RMAN in 1996 to designate additional products as required by the Executive Order. Periodically, EPA revises older versions. For example, revisions to recycled paper content standards were proposed in March, 1995. A final paper RMAN is expected in 1996.

CPG Requirements for Local Agencies

Who is Affected: The CPG applies to all procuring agencies and all procurement actions involving items designated by EPA. Federal agencies, state and local agencies and their contractors must comply when they buy designated products with appropriated federal funds.

This means county or local governments that use federal funds to pay for a project must have a program to favor recycled products that are designated by EPA. Contractors engaged in these projects must do so as well. A good example is highway construction projects.

Procurement Actions: According to the CPG, procurement actions include:

- purchases made directly by a procuring agency and purchases made by any person (e.g., a contractor) in support of work being performed for a procuring agency;
- any purchases of designated items made “indirectly” by a procuring agency, for example through grants, loans, funds, and similar forms of disbursements.

\$10,000 Threshold: There is a \$10,000 threshold for each product. This threshold applies to the procuring agency as a whole rather than to agency sub-groups such as regional offices. It applies when:

- the procuring agency purchases \$10,000 or more of a designated item during the course of a fiscal year; or
- if the cost of designated items or functionally equivalent items was \$10,000 or more during the preceding fiscal year. In this case, all purchases of such products in the following fiscal year are affected.

Specifications: One year after EPA publishes designation of a product, each procuring agency must assure that its specifications for designated items require the use of recovered materials to the maximum extent possible without jeopardizing the intended end use of the item. This means that specifications for items designated by EPA on May 1, 1995 must be reviewed and revised as necessary by May 1, 1996.

EPA uses a range of recycled content levels. Recovered material includes the sub-set, postconsumer material. Some EPA recycled content standards are for postconsumer content alone, others are for recovered material alone or for proportions of both. Refer to Chapter 6: Recycled Content Standards.

Certification and Estimation Requirements: One year after EPA designates a product, contracting officers must require their vendors to:

- certify that the percentage(s) of recovered materials to be used in performance of the contract will be at least the amount required by applicable specifications or other contractual requirements; and
- estimate the percentage of total recovered material used for performance of the contract.

Affirmative Procurement Program: Each procuring agency must have an affirmative procurement program including the following components:

- **preference program** for purchasing designated items which may use minimum content standards, a case-by-case approach to test recycled content levels for specific products, or a substantially equivalent alternative such as remanufacturing or reconditioning options for specific items like toner cartridges;
- **promotion program** for government users and for vendors;
- **procedures to obtain and verify** certifications and estimates of recovered materials;
- **annual review and monitoring** of the effectiveness of the program.

Designated Products: EPA designated the following products on May 1, 1995:

Paper and Paper Products (proposed changes increase the types of paper products)

Vehicular Products

engine coolants
re-refined lubricating oils
retread tires

Construction Products

structural fiberboard
laminated paperboard
carpet
floor tiles
patio blocks
building insulation products
cement and concrete containing coal fly ash
ground granulated blast furnace slag

Transportation Products

traffic cones
traffic barricades

Park and Recreation Products

playground surfaces
running tracks

Landscaping Products

hydraulic mulch
yard trimmings compost

Non-Paper Office Products

office recycling containers
office waste receptacles
plastic desktop accessories
toner cartridges

binders
plastic trash bags

Clarifications of Recycled Content

EPA clarified two gray areas in its recycled content definitions.

Overissue: EPA defines overissue magazines, newspapers and so forth as recovered material, *not* as postconsumer. In the Supporting Analyses for the 1995 RMAN, regarding structural fiberboard, EPA stated that:

The use of over-issue recovered paper would not be counted toward the postconsumer recovered paper component but would count toward the total recovered materials component.

Undelivered Bulk Business Mail: In June, 1995, EPA determined that undelivered bulk business mail recovered from the U.S. Postal Service is postconsumer material.

FEDERAL EXECUTIVE ORDER

President Clinton issued the Federal Acquisition, Recycling and Waste Prevention Executive Order 12873 of October 20, 1993. Among a wide range of other issues, the Executive Order established procurement obligations for federal agencies and procurement guideline requirements for EPA. It also stressed purchase of re-refined lubricating oil, retread tires and recycled paper by federal agencies.

The Executive Order revised minimum recycled content standards for printing papers. As many state and local governments revised their laws to match the Executive Order, the standards are quoted here.

**20% Postconsumer Material Content by December 31, 1995 and
30% Postconsumer Material Content by December 31, 1998 for:**

high speed copier paper, offset paper, forms bond, computer print-out paper, carbonless paper, file folders, and white wove envelopes.

**50% Recovered Material with 20% Postconsumer Material Content
by December 31, 1995 and 50% Recovered Material with 30%
Postconsumer Material Content by December 31, 1998 for:**

other uncoated printing and writing paper, such as writing and office paper, book paper, cotton fiber paper, and cover stock.

CALIFORNIA STATE LAW

The first, 1977, recycled product procurement legislation in California affected state paper purchases. Amendments in 1986, 1989, 1993 and 1994 extended requirements to local agencies, the legislature, universities and the university system as well as expanded the law to all types of products. A local agency, as defined in Section 17518 of the Government Code, is:

any city, county, special district, authority or other political subdivision of the state.

California also has mandatory recycled content legislation for newsprint, plastic trash bags, fiberglass building insulation, glass containers and rigid plastic containers. All of these products sold in the state must contain minimum percentages of recycled content or meet other requirements in the case of plastic rigid containers. The California Department of Conservation monitors recycled content in glass containers and fiberglass insulation.

The California Integrated Waste Management Board (CIWMB) monitors recycled product procurement compliance by state agencies as well as mandatory recycled content requirements for newsprint, trash bags and rigid plastic containers.

Public Contract Code

The recycled product procurement provisions cited on the following page affect local agencies. *Italic emphasis is added to highlight relevance to local agencies and are not part of the legislation.*

Sections 10406 and 10409 refer to vehicle warranties. 1993-94 statements from General Motors, Ford and Chrysler Corporation allow re-refined lubricating oils that meet specifications. Refer to Chapter 15: Recycled Product Examples — Re-Refined Oil.

Sections 12200 and 12161 refer to recycled products and recycled paper products respectively. State agencies must use minimum requirements established by the law but local agencies may use their own requirements, according to CIWMB staff.

Section 10406: *Every procuring agency* shall revise its procedures and specifications on or before July 1, 1992 for the purchase of lubricating oil to eliminate any exclusion of *recycled oils* and any requirement that oils must be manufactured from virgin materials. This section shall not prohibit a *local agency* from purchasing virgin oil products for exclusive use in vehicles whose warranties expressly prohibit the use of products containing recycled oil.

Section 10409: Every *local agency*, as defined in Section 17518 of the Government Code, shall purchase lubricating oil and industrial oil from the seller whose oil product contains the greater percentage of *recycled oil*, if the availability, fitness, quality, and price of the recycled oil product is otherwise equal to, or better than, virgin oil products. This section shall not prohibit a local agency from purchasing virgin oil products for exclusive use in vehicles whose warranties expressly prohibit the use of products containing recycled oil.

Section 12210(a): Fitness and quality being equal, all *local* and state *public agencies* shall purchase *recycled products* instead of nonrecycled products whenever available at no more than the total cost of nonrecycled products. All local public agencies may give preference to the suppliers of recycled products. All local public agencies may determine the amount of this preference.

Section 12213: All *local public agencies* shall require the bidder to specify the minimum, if not exact, percentage of recycled product in the products offered, both the postconsumer and secondary [material] content regardless of whether the product meets the percentage of recycled product required pursuant to subdivision (a) of Section 12200. All contract provisions impeding the consideration of products with recycled product shall be deleted in favor of performance standards.

Section 12168(a): Fitness and quality being equal, all *local* and state *public agencies* shall purchase *recycled paper products* instead of nonrecycled paper products whenever available at no more than the total cost of nonrecycled products. All local public agencies may give preference to the suppliers of recycled products. All local public agencies may determine the amount of this preference....

Section 12169: All *local public agencies* shall require the bidder to specify the minimum, if not exact, percentage of *recycled paper product* in the products offered, both the postconsumer and secondary [material] content regardless of whether the product meets the percentage of recycled paper product required pursuant to subdivision (a) of Section 12161. The contractor may certify zero recycled product. All contract provisions impeding the consideration of products with reclaimed paper content shall be deleted in favor of performance standards.

All printing contracts made by any *local agency* shall provide that the paper used shall meet the requirements of these provisions....

Other sections of the Public Contract Code define requirements for state agencies, including revised minimum recycled content standards for recycled

paper that match the 1993 federal Executive Order, as well as recycled content standards for retread tires and rubber, automotive lubricant, antifreeze, solvent, paint, janitorial paper, compost, plastic and glass products. CIWMB establishes price preferences for state agencies and has guidance that may be useful to local agencies. Contact CIWMB or refer to the InfoCycle Bulletin Board System (BBS). See Appendix III: Resources.

Public Resource Code

Mandatory recycled content requirements in the Public Resources Code mean that every designated item must contain a minimum amount of recycled content if it is to be sold to public or private entities in the state. Only current and future requirements appear in the summaries below.

Newsprint (Sections 42750-42791): Recycled content newsprint means newsprint with not less than 40% postconsumer fiber. Newsprint consumers must ensure that they use at least the following percentages of newspaper with recycled content. Certifications to CIWMB are required.

January 1, 1996	35%
January 1, 1998	40%
January 1, 2000	50%

Plastic Trash Bags (Sections 42290-42297): Mandatory percentages of postconsumer content in bags is based on bag thickness. This law includes plastic bags intended for use as a container to hold, store, or transport materials to be discarded, composted or recycled, including, but not limited to, garbage bags, composting bags, lawn and leaf bags, kitchen bags, compactor bags and recycling bags. Bags *not included* are grocery sacks (any container for food) and bags for hazardous waste. Certifications to CIWMB are required.

January 1, 1993	10%	1.0 mil or greater thickness
January 1, 1996	20%	.75 mil or greater thickness
January 1, 1997	30%	.75 mil or greater thickness

In 1995, AB 1851 added the 20% postconsumer content level for 1996 and exempted bags with certain attached closures until 1997. This exemption includes many consumer trash can liners from major manufacturers.

Fiberglass Building Insulation (Sections 19500-19502, 19510-19512, 19515-19524, 19530-19535): This type of insulation must contain the stated percentage of cullet. The recycled material “cullet” means postconsumer glass from food, drink, or beverage containers or any other glass not generated by fiberglass manufacturing. Fiberglass building insulation means fiberglass batt, blanket, loose fill or spray in-place material, primarily designed and used to resist heat flow, that is installed in roofs, ceilings, walls, and floors of buildings. Certifications to the Department of Conservation, Division of Recycling, are required.

January 1, 1995 30%

Glass Containers (Sections 14513, 14549, 14552, 14580): Postfilled glass means any glass container which had been previously filled with a food, drink or beverage. Glass manufacturers must ensure that the glass containers they produce contain at least the following percentages of postfilled glass. Certification to the Department of Conservation, Division of Recycling is required.

January 1, 1996 35%

The legislature eliminated higher percentages in future years in 1995.

Rigid Plastic Containers (Sections 42300-42301, 42310, 42320-42327, 42330, 42340): These containers include any plastic package with a relatively inflexible finite shape or form, with a minimum capacity of eight fluid ounces to a maximum capacity of five fluid gallons or equivalent volume, that maintains its shape while holding other products, including, but not limited to, bottles, cartons, and other receptacles for sale or distribution in the state. CIWMB begins random certification in 1996.

All plastic containers used to package products sold in California must meet at least one criteria unless exempted or waived:

- made with at least 25% postconsumer material
- have a recycling rate of 25% (or 45% or 55% for specific types)
- be reusable or refillable as defined
- be source reduced as defined

California Law Requirements for Local Agencies

According to Sections 10406, 10409, 12168, 12169, 12210(a) and 12213 of the Public Contract Code, California requires its local agencies to:

Buy Recycled: Recycled products must be purchased instead of virgin counterparts if fitness and quality are equal and if prices are no higher. This includes recycled paper in printing contracts.

The State allows all local agencies to establish special preferences if they wish to do so and to set the amount of the preference they wish to use. Special preferences are not mandatory.

Require Recycled Content Information from Bidders: When seeking recycled products, local agencies must require their bidders to tell them the minimum, if not exact, percentage of postconsumer and/or recovered material used, even if the percentages do not meet minimum recycled content standards established for state agencies. Bidders may state zero recycled content.

When bidders do not furnish required information, their bids are discarded as non-responsive. Alameda County cleverly overcomes this problem by stating on bid forms that if the bidder does not provide recycled content information, percentages will be assumed to be zero for minimum content and price preference considerations.

Revise Contract Provisions: If provisions in contracts impede recycled product, recycled paper product or re-refined oil bids, they must be deleted. Performance standards should be used instead whenever possible.

You should review your specifications and contract boilerplate to be certain that recycled products can compete. Performance standards refer to what the product must do rather than how it should be designed.

Mandatory Recycled Content: Since mandatory recycled content requirements affect sellers instead of buyers within the state, changing specifications for products you buy should be easy. Simply state the recycled content requirements for each product when you seek bids for newsprint, plastic trash bags or fiberglass insulation. You can check compliance by your vendors with the published lists of certifications. See Appendix III: Resources — Certified Product Listings and Guidance.

Compliance with mandatory recycled content requirements for glass and plastic packaging applies only when you buy these containers to package materials you then sell or distribute. You can depend on state compliance procedures when you are buying the contents, not the package.

COMPLYING WITH FEDERAL AND STATE LAW

You can avoid future compliance problems by including the following components when you design or improve your buy-recycled programs.

Preference Program

In this context, a preference program means a method to seek and favor recycled products with or without a price preference. If you implement a general policy to favor recycled products, you will meet both federal and California mandates. This manual includes the steps needed for the most comprehensive program.

Promotion Program

Promotion means education. Users need education to become comfortable with products that may be a little different from those they always used before. Vendors need to know how serious you are about seeking recycled content and source reduction options.

Distribute your policies internally and externally. Publish articles in your newsletters, include program requirements in staff manuals, conduct training workshops and alert key personnel about relevant conferences. Encourage people in your departments to report their successes and failures so all can learn. Some jurisdictions have formal recognition programs for individuals who have contributed significantly during the year.

You can educate your vendors by publishing articles in trade magazines, participating in vendor shows and trade fairs and discussing your policies at bidders conferences. The most effective method will always be prominent statements of your policy in bid solicitations.

Certification of Recycled Content

The easiest way to obtain recycled content information is to insert a certification form into your bid and contract documents. Your vendors can obtain the necessary information from the manufacturers they represent. This meets both federal and California mandates.

You can require vendors to certify that they will meet your minimum requirements for individual products and still ask them to tell you the minimum they will *actually* supply under your contract if it is more than they certify. This will help you monitor changes in recycled content levels over time. You can structure bids to

allow for less than the minimum requirements when markets are tight, but you should be able to justify this decision. Allow bidders to state zero recycled content and state your assumption that no information means zero recycled content.

California State and Alameda County contracts use the penalty of perjury to enforce certifications. Otherwise, formal certifications, together with a boilerplate clause that allows you access to vendor and manufacturer records, will give you a method to verify vendor claims if problems arise.

Estimating the percentage of recovered material to be used during the contract is a federal, not a state, requirement. It is not strictly enforced. You can use the certified percentage as the estimate.

Annual Review and Monitoring

EPA recommends that procuring agencies track their purchases to establish benchmarks for review. Estimates will do if hard data cannot be obtained. California imposes reporting requirements on state agencies but not on local agencies. Components of a monitoring program include:

- minimum recycled content percentages for products bought or bid;
- comparative price information;
- quantity of each item purchased during the year;
- availability (or non-availability) of each item with recycled content;
- performance of each item.

You should compare the current results to previous years, too. King County, WA and Alameda County, CA use these comparisons with dramatic impact. They show data for each year in graphs that put the program history neatly on one page and show how substantial the growth is from year to year. They also describe factors that affected the current year results.

SOURCES OF INFORMATION

Both EPA and the California Integrated Waste Management Board have information about their programs. Refer to Government Regulations and Guidance and Certified Product Listings in Appendix III: Resources. You will find relevant information as well in Chapter 5: Definitions, Chapter 6: Recycled Content Standards, Chapter 7: Price Preferences and Chapter 8: Bid and Contracting Procedures — Certifications.

CHAPTER 4
MEASURE D REQUIREMENTS

The Alameda County Waste Reduction and Recycling Initiative Charter Amendment of 1990, commonly referred to as Measure D, has requirements that affect procurement of products. While these provisions apply primarily to the Alameda County government alone, many of the communities within the County used Measure D to help shape their own buying programs. The Alameda County Source Reduction and Recycling Board (Recycling Board) is responsible for policy actions. The relevant provisions of Measure D are reproduced here for easy reference.

SOURCE REDUCTION

Subsection 64.080(A)

A county waste minimization program with a goal of reducing the weight of County purchases, and with a specific goal of reducing the weight of County purchases of paper products by ten percent (10%) by January 1, 1995, and by fifteen percent (15%) by January 1, 2000. Said program shall emphasize the conservation of paper products by means of a comprehensive employee education program. The Recycling Board may establish further goals for reduction in County purchases.

RECYCLED PRODUCT PURCHASE PREFERENCE PROGRAM

Subsection 64.120

- A. The County shall purchase Recycled Products where they are comparable in function and equal in cost to products manufactured from virgin materials.
- B. The County shall apply, to the extent made possible by the availability of monies..., a price preference of ten percent (10%) to its purchases of Recycled Products where said Recycled Products are comparable in function to products manufactured from virgin materials.
 1. Price preferences shall be applied to a full range of recycled product categories, including but not limited to, recycled paper products, compost and co-compost products, recycled glass, recycled oil, and recycled solvents and paints.

2. The Recycling Board may establish a price preference which is greater than the ten percent (10%) for certain recycled product categories, if it is demonstrated that the manufacturing costs for said recycled product categories are higher than the manufacturing costs for similar products produced with virgin materials such that a ten percent (10%) preference is insufficient for said recycled product categories to be competitive.
 3. Commencing January 1, 1995, the Recycling Board may reduce the price preference for certain recycled product categories, if it is demonstrated that the manufacturing costs for said recycled product categories are competitive with the manufacturing costs for similar products produced with virgin materials, and that any such reduction will not result in a substantial decrease in the percentage of recycled products purchased in the category affected by the reduction.
 4. Any monies remaining after fulfilling the other requirements of this Paragraph in a given year shall be apportioned by the Recycling Board to municipalities which have established similar price preferences and recycled product specifications.
- C. Consistent with Paragraphs 64.120(A) and (B), the County shall modify its purchasing forms and procedures to ensure that, beginning no later than one (1) year after the effective date of this Act, information as to the recycled content, including both postconsumer discards and secondary discards, of all supplies and materials purchased by the County is available and taken into account during the purchasing process. Said information shall also be obtained for the supplies and materials portions of all public works contract bids that are received by the County.
- D. Any County agency which has responsibility for drafting or reviewing specifications for procurement items shall be required to revise said specifications, within one (1) year of the effective date of this Act, to eliminate exclusions of recovered materials and requirements that said items be manufactured from virgin materials.

- E. To the extent that the practice of accepting bids for multiple products inhibits the purchase of recycled products, the County shall accept bids for individual products and/or bids for fewer products.
- F. The Recycling Board may establish standards for a recycled product category which exceed the levels of postconsumer and secondary discard content established by this Act, provided, however, that said standards will not result in a substantial decrease in the percentage of recycled products purchased in said category.
- G. Notwithstanding any other provisions of this Charter, this Subsection shall apply to the supplies and materials portions of all public works contracts made by the County. The County may set minimum amounts of recycled products, both by quantity and category, to be utilized in the execution of said contracts; and shall contract separately for the supplies and materials portions of said contracts where separate contracting would result in more complete compliance with this Act while not significantly increasing the cost of a given contract, except as allowed by Paragraph 64.120(B).
- H. It shall [be] a County policy goal to purchase recycled paper products such that, by January 1, 1995, at least fifty percent (50%) of the total dollar amount of paper products purchased or procured by the County shall be purchased or procured as recycled paper products. Not later than January 1, 1999, the Recycling Board shall recommend to the Board of Supervisors further policy goals for County purchases of all types of recycled products.

See Chapter 5: Definitions for the terms and definitions to be used with these provisions.

SUPPORT FOR PROGRAMS

Subsection 64.060

The current relevant portions of this Subsection state that the Recycling Board shall “fulfill the provisions of this Act by disbursing monies from the Recycling Fund as follows:...

- 3. Ten percent (10%) shall be applied to the Source Reduction Program...

5. Five percent (5%) shall be applied to the Recycled Product Purchase Preference Program.
6. Fifteen percent (15%) shall be disbursed on a discretionary basis by the Recycling Board to support any of the activities described within this Paragraph.

While there are other non-procurement related programs covered by this Subsection, monies may be available to support procurement initiatives for source reduction and recycled products. In addition, Subsection 64.120, Recycled Product Purchase Preference Program, indicates that monies can be allocated to municipalities if the County does not spend its full price preference allowance.

The Alameda County Source Reduction and Recycling Board has developed procedures to distribute these Measure D monies to qualified projects.

FLEXIBILITY IN MEASURE D REQUIREMENTS

The Act provides some flexibility to the Recycling Board to adjust as recycled product and source reduction opportunities change. Both standards and price preferences can be changed.

Recycled Product Standards

According to Subsection 64.120(F), the Recycling Board can establish standards for a recycled product category which exceed the postconsumer and secondary discard levels if a substantial decrease in purchase volume will not result. This allows some leeway in definitions of recycled content to improve or maintain purchasing volumes.

Price Preference Revisions

Subsection 64.120(B)(2) allows the Recycling Board to establish recycled product price preferences greater than 10% if manufacturing costs in certain product categories are high enough to interfere with competition at the 10% level. After January 1, 1995, Subsection 64.120(B)(3) allows the Board to reduce price preferences for certain categories if it will not result in substantial decrease in purchasing those products. This flexibility allows the Board to authorize higher or lower prices as conditions in the marketplace change.

Board Actions

Based on recommendations from the project team, the Alameda Source Reduction and Recycling Board used its flexibility and passed resolutions in November, 1995, to accomplish the following:

1. Establish Source Reduction Priorities in Purchasing: The county will make purchasing decisions based on the following order of priority: source reduction, reuse, recycled content. This follows the common sense approach to “turn off the tap” before “mopping up the floor.”

2. Eliminate Unproductive Price Preference Categories: The county is allowed to eliminate recycled price preferences for complex products, metal products and products which cannot contain recycled content such as: food, pharmaceuticals and surgical supplies.

3. Require Contractors and Grantees to Adhere to Policies: The Recycling Board will recommend to the Board of Supervisors that county contractors and grantees adhere to the source reduction and recycled product policies followed by the county government.

4. Include Ownership Cost Factors in Purchasing Decisions: The Recycling Board will recommend to the Board of Supervisors that purchasing decisions be based on criteria that include durability, maintenance, disposal and other product “lifecycle” costs.

5. Establish Method to Distribute Funds: The Recycling Board staff will develop a process to distribute any funds remaining from County price preference expenditures during the current fiscal year. Infrastructure needs to serve all municipalities can be included as well as methods for municipalities to obtain funds if they meet certain standards or criteria.

6. Evaluate Flexibility in Price Preference Percentages: The Recycling Board will consider a policy to allow the county to set more flexible price preference percentages and dollar limits for certain products. The Recycling Board staff will draft a recommended policy.

Following up on item 6, the Recycling Board passed another resolution in February, 1996, to allow price preference flexibility to the Alameda County General Services Agency. The Recycling Board also increased the price preference for “commercially available printing and office paper” to 20% because, according to item 3, contractors and grantees could be required to provide their work on recycled paper when the county itself used virgin paper because prices were above the existing 10% price preference. Opportunities to educate the public through high visibility use of recycled paper for items such as

public health brochures or sample ballots could be lost as well for the same reason.

According to the February, 1996 resolution, the Alameda County Source Reduction and Recycling Board:

1. Adopts the following guidelines for Alameda County expenditure and reimbursement of “Discretionary” funds under the Recycled Product Purchase Preference Program:
 - A maximum of \$15,000 in each fiscal year may be used from the funds allocated under the Purchase Preference Program as discretionary funds for the purchase of recycled content products by Alameda County.
 - Discretionary funds will be used only for the purchase of recycled content products when the 10% or prevailing Board-specified price preference is insufficient.
 - Purchases of recycled content products using discretionary funds shall not exceed 100% price preference over comparable products. [Or, such products can cost up to twice as much as a comparable virgin product.]
 - The Alameda County General Services Agency will allocate discretionary funds and be responsible for reporting, recordkeeping and requisition reimbursement from the Alameda County Source Reduction and Recycling Board.
2. Authorizes an increase in the Alameda County reimbursable price preference for “commercially available printing and office paper” from 10% to 20%, effective immediately.

Bracketed information, [], was added to clarify the Recycling Board text for other jurisdictions which may want to use a similar strategy in their own programs. The Recycling Board staff plan to propose guidelines for distribution of any “leftover” purchase preference funds in any given fiscal year to municipalities. This will satisfy item 5 in the November, 1995, resolution.

CHAPTER 5 DEFINITIONS

When Alameda County passed Measure D in 1990, it approved recycled definitions similar to those in the state of California's procurement laws. Since then, there have been some significant changes in both the state and federal procurement laws. These changes impact local purchasers and their ability to buy recycled products that meet Measure D requirements.

The following recommended definitions meet the objectives of Measure D within a framework of state and federal requirements, while also giving purchasers flexibility to meet changing market conditions. However, because of the strict minimum content requirements written into Measure D, these definitions do not meet the letter of its law. Nevertheless, jurisdictions which choose to use the definitions here will meet the intent of Measure D and be more successful in finding recycled products for their program. The reasons for changes appear in Issues in this chapter.

PURPOSE OF DEFINITIONS

Accurate definitions are key to purchasing the type of product a buyer really wants. The best recycled and source reduction definitions are specific in identifying expectations and priorities, yet generic so they apply to a wide array of products and materials. Since manufacturing capabilities and target recycled content percentages change over time, it is wisest to leave standards (such as specific percentage contents and minimum contents) out of definitions. Purchasers can then use the definitions as guides to choosing the best standards that meet current policy objectives and market conditions.

RECOMMENDED DEFINITIONS

Recycled Product [Also See Alternate]

“Recycled Product” means a product that contains the highest amount of postconsumer material practicable or, when postconsumer material is impracticable for a specific type of product, contains substantial amounts of recovered material.

Note: This definition establishes policy priorities when there is no official policy or if the official policy is very general.

Recycled Product [Alternate]

“Recycled Product” means a product that meets [jurisdiction’s] recycled content policy objectives for postconsumer, preconsumer and recovered material.

Note: This definition relies on an explicit official recycled product purchasing policy in your jurisdiction. An official policy that sets parameters is more straightforward than establishing policy through definitions. See Chapter 2: Policy and Implementation Guidelines for details.

Remanufactured Product

“Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

Reused Product

“Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

Source Reduction Product

“Source Reduction Product” means a product that results in a net reduction in the generation of waste, and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

Postconsumer Material

“Postconsumer Material” means a finished material which would normally be disposed of as a solid waste, having completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

Preconsumer Material

“Preconsumer Material” means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.

Note: “Preconsumer material” refers to scraps produced in the process of making a product before it reaches its intended end-user. Examples include printers’ waste, unsold magazines, and scraps left over from processes which mold plastic into bottles or cut metal sheets into cans. “Postconsumer material” refers to discards *after* a product reaches its end-user. Examples include brochures used by a consumer, packaging received at an industrial site, magazines from someone’s home or office, and used plastic bottles or aluminum cans. Preconsumer and postconsumer materials are mutually exclusive. They are both included within the “recovered material” category.

Recovered Material

“Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material, but does not include excess resources of the manufacturing process.

Note 1: Examples of “excess resources” include:

- Paper — fibrous wood discards generated during the manufacturing process, fibers recovered from waste water, mill broke, trimming of paper machine rolls, manufacturers’ obsolete inventory, wood slabs, chips, sawdust, or other wood residue;
- Glass — scrap (or cullet) generated within the plant;
- Plastic and Rubber — “sprues” and “runners” from molding processes, rework, internally generated regrind, or “off spec” resin from producers;
- Steel and Aluminum — “runaround” scrap within the mill.

Note 2: The “recovered material” definition is based on the state of California’s definition for “secondary material.” This is a stricter definition than the federal definition for “recovered material.” Use of this state-based version will also assure compliance with the federal requirement.

Note 3: The name for the “recovered material” category varies widely in local, state and federal laws. “Secondary discards,” “secondary materials” and “secondary waste” are corresponding terms.

Post-Industrial and Post-Commercial Material

There are no widely accepted definitions of “post-industrial material” and “post-commercial material”. Generally, the terms mean preconsumer material and may exclude portions of the manufacturing production stream that are included in broader definitions of recycled content. However, some people use these terms to identify postconsumer material from industrial or commercial sources. Ask anyone using these terms to explain what they mean and to give examples of the feedstocks they have in mind.

ISSUES

Measure D Definitions: Comparison of Intent to Current Realities

The definition of “Recycled Product” in Measure D sets inflexible recycled content parameters and includes remanufactured products. Subsection 64.120(F) allows flexibility to adjust parameters as described in Chapter 4. This definition no longer serves the goals of the charter amendment.

“Recycled Product” shall mean a product, good, material, or supply no less than fifty percent (50%) of the total weight of which consists of secondary and postconsumer discards with not less than ten percent (10%) of its total weight consisting of postconsumer discards; or any product, good, material or supply which has been diverted from the supply of discarded materials by refurbishing and marketing said product, good, material or supply without substantial change to its original form.”

Recycled Product Minimum Content Standards: Since passage of Measure D by Alameda County in 1990, California has changed some of its definitions and standards describing minimum content. The Environmental Protection Agency and the White House Executive Order 12783 reinforced certain industrial practices which are inconsistent with the original requirements in Measure D.

Products in the marketplace today have higher levels of postconsumer materials while levels of recovered materials have dropped. In some cases, recovered material requirements have been eliminated altogether. These legislative, regulatory, and industrial changes have created a market in which it will be increasingly difficult for purchasers to find products meeting the letter of the law for the original definitions in Measure D.

Source Reduction Products: According to Subsection 64.020(C)(1) of Measure D, the Alameda County Recycling Plan shall ensure a county-wide effort to minimize generation of refuse. Per Subsection 64.020(C)(5), the Recycled Product Purchasing Preference Program is to “further encourage recycled materials markets by maximizing the amount of recycled products purchased by County government agencies.” The first finding in Subsection 63.030 states in part “ The increasing consumption of single-use and environmentally harmful products depletes natural resources [and] produces huge quantities of refuse....”

The definition of “recycled product” in Measure D combines minimum recycled content standards for some products with a description of remanufacturing for others. Since Measure D was passed, buyers’ understanding of source reduction purchasing has become more sophisticated. The legislative intent can be met more effectively by separating “recycled” from “source reduction” products.

Compatibility and Compliance with State and National Laws

The more compatible definitions become nationwide, the broader the markets for individual recycled products can be. This creates economic incentives for greater recycled product development and availability. When county and city buyers use definitions compatible on state and national levels, they find a wider range of products available to them, as well as access to state and national contracts if they wish to use them.

Although Alameda County followed the state of California's lead in its definitions in 1990, both the state and the U.S. Environmental Protection Agency (EPA) have since established recycled content standards for product categories which do not conform to the Measure D standard of 50% secondary discards with 10% postconsumer discards by total weight of the product. Separating the content standards from the general definitions allows flexibility as standards change over time.

Purchasers must meet the intent of EPA definitions and standards when buying products to fulfill certain federal contracts. There are also California laws, directed toward manufacturers, governing the recycled content of some products. The recommended definitions in this chapter take into account these state and federal requirements.

Source Reduction Products

Alameda County included source reduction products in Measure D, in response to the A.B. 939 directive to reduce and recycle. The recommended definitions separate “source reduced” and “reused” and “remanufactured” products from the “recycled” product definition in order to clarify the importance and different perspective of each. In some cases, purchasers may find it necessary to choose between a recycled product and a source reduction product. In such a case, purchasers should set priorities according to the solid waste hierarchy: Reduce, Reuse, Recycle.

Applicability Across Material Types

The definitions in Measure D were written with a focus on printing and writing paper, reflecting the fact that printing and writing paper dominated recycled product development during the 1980s. Now, however, there is a wide array of high quality recycled products made from many different types of materials. Capacities and practices within each of these other industries require some differences in minimum recycled contents.

The standards for paper do not translate adequately across all materials or even to other paper products such as corrugated or toweling. For example, some paper and plastic product manufacturers achieve far higher postconsumer percentages than those originally required by Measure D, but they do not meet the original total recovered (secondary discards) requirement.

The recommended definitions in this chapter are designed to accommodate all materials and give flexibility to purchasers to attain state of the art recycled content percentages for each type of material and product. They also allow purchasers to prioritize source reduction products over recycled products when appropriate.

Importance of Postconsumer Focus for Recycled Products

The recommended definitions place a priority on postconsumer content for several reasons:

- It makes sense to target taxpayer money only on relevant markets that would otherwise be undeveloped. While markets for preconsumer materials have existed always, most postconsumer materials had no markets until purchasing requirements created incentives to develop appropriate technology and production systems.
- Postconsumer materials are more challenging to reprocess than are manufacturing discards.
- Since the vast majority of material collected in community programs is postconsumer, it is logical for local purchasers to emphasize postconsumer content.
- Scrap generated within a plant is put back into production systems because it is economically necessary. Sophisticated, efficient marketing systems exist for converting scrap. Industry does not take similar responsibility for postconsumer materials. Instead, their disposition falls to local governments.

Need for Flexibility in Recovered Material Requirements

When technology and production systems limited the amount of postconsumer materials that could be incorporated into recycled products, it was consistent to require compensating high amounts of recovered material, which could include postconsumer. Measure D refers to this category as “secondary discards.”

Now, however, recycled product production is expanding so successfully that manufacturers in many industries find it difficult and expensive to find enough preconsumer material to fulfill the high expectations. While in many cases the postconsumer content is much higher than required in Measure D, often it is not high enough to meet the total 50% secondary requirements of Measure D.

Purchasers may have difficulty finding products that meet the Measure D requirement for 50% secondary discards, even though high postconsumer levels exist. Contrary to the intent of the legislation, overall percentages of recycled products being purchased would drop if purchasers had no option. Flexibility to lower or eliminate recovered material requirements maintains goals as the marketplace changes.

“Total Weight” vs. “Fiber Weight” in Paper

Following the state of California's procurement standards, Measure D (Subsection 64.150(BB)) requires that the percentage content of a recycled product be measured by “total weight.” State law was revised to “fiber weight” for printing and writing paper in 1994 to conform to national policy and standard industry practice.

Fiber may account for as little as 70% in printing and office papers, and as little as 50% in coated papers, with fillers, additives, coatings and many other components making up the balance. Recycled content measured by fiber weight may appear significantly higher than recycled content in the same product when measured by total weight of the entire sheet. For example, a copy paper claiming 15% recycled content by fiber weight may have only 10% recycled content by total weight, depending on how much of the sheet is non-fiber.

There are virtually no paper manufacturers that continue to calculate recycled content percentages by total weight of the sheet. The few recycled papers that may still be labeled as measured by “total weight” almost always mean “total fiber weight.”

CHAPTER 6 RECYCLED CONTENT STANDARDS

Purchasers want to know how much recycled content is enough. Recycled content standards should be high enough to stimulate demand for recovered materials but not so high that you lose product performance or availability.

Generally, recycled content is the percentage of recycled material in a finished product measured by total product weight. There are variations, however. Recycled content in paper is measured by fiber weight and only the core material is weighed when surface treatments vary, like insulation.

TYPES OF STANDARDS

You can express standards three ways:

Minimum Recycled Content Standards: These establish the least amount of specified recycled material that will satisfy a responsive bid. Such standards do not mean a certain percentage and no more. They state the *minimum* acceptable but suppliers can provide higher percentages. Most governments use minimum recycled content standards.

Maximum Recycled Content Standards: These state the *most* recycled material allowed. Suppliers can provide less but no more. Maximum standards are rare. Engineers use them for products like recycled asphalt and glass aggregate. Maximum standards exist because there may not be enough recovered feedstock available for an entire job or because performance can fail if contractors use more than the specified percentage.

Range of Recycled Content Levels: Standard-setting bodies use ranges when addressing wide geographic areas. The low end is the minimum acceptable amount of recycled content. The high end is the maximum amount available somewhere within the marketplace. EPA uses ranges.

TYPES OF RECYCLED CONTENT IN STANDARDS

You can apply minimum, maximum or range standards to postconsumer, preconsumer and total recovered material separately or in combination. EPA established the dual practice used most frequently. Postconsumer material is expressed as a sub-part of total recovered material.

The percentage of total recovered materials is stated first, followed by the percentage of postconsumer material. Both percentages are separate. You do not add them together for a total nor use the second to derive a percentage of the first.

Total recovered material/postconsumer material or XX/XX

The manufacturer is free to choose virgin, preconsumer or postconsumer feedstocks to make up the balance when the first number is less than 100. For example, 50/20 means fifty percent of product weight is recycled content and fifty percent is the manufacturer's choice. The 20 refers to postconsumer material. 20 percent of 100 percent must be postconsumer.

Postconsumer Only: Standards for postconsumer recycled content alone mean that all of the total recycled content must be postconsumer. A twenty percent postconsumer standard means 20 percent of product weight must be postconsumer. When the total recovered material percentage and the postconsumer percentage are the same, it is a postconsumer only standard. Zeros may be used for the recovered material portion.

20/20 = 20% total recovered material, all of which is postconsumer
00/20 = 20% total recovered material, all of which is postconsumer

Dual Standards: When some preconsumer material is allowed, the percentages are unequal. For example, 50/20 means 50 percent of product weight must be recovered material of which 20 percent of product weight must be postconsumer material and 30 percent can be preconsumer or postconsumer. The remaining 50 percent is the manufacturer's choice.

50/20 = 50% total recovered material with 20% postconsumer

Recovered Material Standards Only: Sometimes, standards have no postconsumer material percentage. While all of the total recovered material could be postconsumer, none is required. Zeros in the second part are used.

80/00 = 80% total recovered material, no postconsumer required

SETTING STANDARDS

The most effective standards result from extensive product research. Manufacturing practices must be understood thoroughly. Performance characteristics of the finished product and manufacturing technicalities may limit the amount of recycled content. Few governments research content standards. Many rely on EPA for information.

General standards, applied across all product categories, have been used instead. These are unreliable and they stifle innovation when used too stringently because products and recovered feedstocks vary widely. Product-specific standards are more efficient.

The most common general standard, 50/10, or fifty percent total recovered material with 10 percent postconsumer, was based on paper manufacturing practices ten years ago. It no longer applies to paper products and it is not accurate for most products made with other materials.

Recycled content standards change with time. The quality of recovered material feedstocks improves as processing technologies advance. Production technologies also advance. Manufacturers use much higher proportions of postconsumer materials today than they did a few years ago.

SOURCES OF STANDARDS

You can use standards established by others for a wide range of products. Current standards for EPA, California and Alameda County appear in Table 6-II. California revises its standards for product categories periodically by amending its legislation. EPA revised its procurement guidelines in May, 1995, and introduced ranges of recycled content levels to avoid standards that quickly go out of date. EPA proposed revisions to recycled paper standards in March, 1995. A final version is due in 1996.

Two other organizations research use of recycled content. Scientific Certifications Systems and Green Seal certify recycled content use for their clients and they establish product-by-product standards. Please refer to Appendix III: Resources for addresses.

Recommended Standards

Fifteen products were evaluated as examples for this manual. See Chapter 15: Recycled Product Examples for details. Recommended content standards are summarized in Table 6-I. These standards reconcile California and EPA standards with current production activity. You can use these recommended standards for the fifteen product types.

**Table 6-1
RECOMMENDED RECYCLED CONTENT STANDARDS
FOR FIFTEEN PRODUCT EXAMPLES**

ITEM	% POSTCONSUMER MATERIAL	% RECOVERED MATERIAL
Binders pressboard cover	20%	-
paperboard in plastic covering	75%	-
solid plastic cover	25%	-
plastic covering	-	25%
Copy Paper	20% 1995, 30% in 1999	-
Fiberglass Insulation	-	30% cullet
File Storage Boxes	50%	-
Flexible Delineator Posts	25%	-
Inter-Office Envelopes	20%	-
Paper Towels	40%	-
Playground Surfaces	90% rubber and/or	90% recovered sneaker
Plastic Food Service Trays durable plastic	25%	-
disposable polystyrene	25%	-
disposable paper	-	80%
Plastic Lumber Benches	50%	-
Re-Refined Oil	70%	-
Soil Amendment - Compost	not applicable	not applicable
Trash Cans/Rolling Carts plastic	20%	-
paper	50%	-
plastic rolling cart	10% body 50% lid	-
Trash Can Liners	20% 1996 30% 1997	-
Unbound Aggregates	maximum per application	maximum per application

Markets for Recycled Products, January, 1996

STANDARDIZING RECYCLED CONTENT STANDARDS

The greatest inhibition to mass production of recycled products is recycled content standards that vary from one customer to the next. Manufacturers need consistency to develop economies of scale.

Manufacturers also need targets that remain in place for some time to develop their technologies, to build new capacity and to predict their feedstock needs. Although recycled content standards should be brought up-to-date periodically, new standards that push technological limits should not be changed for several years.

EPA standards are recent, well researched and apply to a wide geographic base. The manufacturing sector contributes to the EPA development process and most companies know what to expect long before EPA issues its final standards. Some recycled content standards established by the State may be more applicable, particularly in California where some standards are mandatory. The California standards have been in place long enough to become industrial norms.

USING RECYCLED CONTENT STANDARDS

Once you select a recycled content standard for a product, you must educate your vendors. They cannot meet your requirements unless they know exactly what you want. There are two ways, depending on your circumstances:

Specifications: If you check your specifications each time you issue invitations for bids or request price quotations for specific products, insert the recycled content standard in the product specification.

Bid Documents and Telephone Quotes: If you use third-party specifications, insert recycled content standards for each product in the bid document. The standards should follow the clause that explains your policy to favor recycled products. When you seek telephone quotes, vendors should be told the recycled content standard at the same time you describe your other requirements.

Flexibility: If your target is postconsumer content, you need to express that goal when stating your recycled content policy and when stating recycled content standards in bid documents. A southern state buyer lost the opportunity to get 40/20 forms paper at a much lower cost because his bid had a firm 50/10 specification. See the recommended bid clauses at the end of this chapter for flexibility when evaluating bid results.

Table 6-II
COMPARISON OF RECYCLED CONTENT STANDARDS
(recovered material/postconsumer material)

PRODUCT	ALAMEDA COUNTY	STATE/CA	EPA/CURRENT	EPA/PROPOSED
PAPER - PRINT	total weight	fiber weight		fiber weight
reprographic	50/10	00/20	50/00	00/20
offset	50/10	00/20	50/00	00/20
tablet	50/10	00/20	50/00	00/20
forms bond	50/10	00/20	50/00	00/20
envelope - wove	50/10	00/20	50/00	00/20
envelope - kraft	50/10	50/10	50/00	00/10-20
cotton fiber	50/10	50/20	50/00	50/20
text/cover	50/10	50/20	50/00	50/20
supercalendered	50/10	50/10		00/10
check safety	50/10	50/10		00/10
coated	50/10	50/10		00/10
carbonless	50/10	50/10		00/20
PAPER - BRISTOL	total weight	fiber weight		fiber weight
file folders	50/10	50/10	50/00	00/20
dyed filing products	50/10	50/10	50/00	20-50/20
cards	50/10	50/10	50/00	50/20
pressboard	50/10	50/10	50/00	50/20
tags & tickets	50/10	50/10	50/00	20-50/20
NEWSPRINT	50/10	00/40	00/40	40-100/40-85
PAPER - TISSUE	total weight	fiber weight		fiber weight
toilet - commercial	50/10	50/10	00/20	100/25-60
towels - commercial	50/10	50/10	00/40	100/40-60
napkins	50/10	50/10	00/30	100/30-60
facial	50/10	50/10	00/05	100/30
industrial wipers	50/10	50/10	00/00	40-100/40
PAPERBOARD	total weight	fiber weight		fiber weight
corrugated	50/10	50/10	00/35	00/30-50
solid fiber boxes	50/10	50/10	00/35	00/40
folding cartons	50/10	50/10	00/80	100/40-80
industrial	50/10	50/10		100/45-100
miscellaneous	50/10	50/10	00/90	90-100/75-100
padded mailers	50/10	50/10		00/5-15
carrierboard	50/10	50/10		25-100/15
brown paper & bags	50/10	50/10	00/05	5-40/5-20
tray liners	50/10	50/10		100/75

Markets for Recycled Products, January, 1996

Table 6-II continued
COMPARISON OF RECYCLED CONTENT STANDARDS
(recovered material/postconsumer material)

PRODUCT	ALAMEDA COUNTY	STATE/CA	EPA/CURRENT	EPA/PROPOSED
NON-PAPER OFFICE PRODUCTS total weight				
Recycling and Waste Containers				
plastic	50/10		00/20-100	
paperboard	50/10		00/80	90-100/75-100
steel	50/10		25-100/00	
Desk Top Accessories	50/10		00/25-80 PS	
Toner Cartridges	50/10		reclaim and buy remanufactured	
Binders				
plastic-covered	50/10		25-50/00	
chip/paperboard	50/10		00/80	90-100/75-100
pressboard	50/10	50/10	50/00	50/20
Plastic Trash Bags	50/10	00/20 - 00/30	00/10-100	
TIRE-DERIVED RUBBER, GLASS AND PLASTIC PRODUCTS				
rubber products	50/10	00/50		
glass products	50/10	50/10		
plastic except bags	50/10	50/10		
CONSTRUCTION PRODUCTS				
Insulation	total weight, not volume - applied to core materials only, not facings			
fiberglass	50/10	30/00	20-25/100	
cellulose	50/10		00/75	
perlite board	50/10		00/23	
plastic rigid foam	50/10		09/00	
plastic foam-place	50/10		05/00	
plastic reinforced	50/10		06/00	
phenolic foam	50/10		05/00	
rock wool	50/10		75/00	
Fiberboard	total weight, not volume - applied to core materials only, not facings			
structural	50/10		00/80-100	
laminated	50/10		00/100	
PET Carpet Fiber	50/10		00/25-100	
Floor Tiles - rubber	50/10		00/90-100	
Floor Tiles - plastic	50/10		90-100/00	
Patio Block - rubber	50/10		00/90-100	
Patio Block - plastic	50/10		90-100/00	
Cement/Concrete with Fly Ash	per EPA, specifications must allow coal fly ash or ground granulated blast furnace slag - there are no recycled content standards			

Markets for Recycled Products, January, 1996

Table 6-II continued
COMPARISON OF RECYCLED CONTENT STANDARDS
(recovered material/postconsumer material)

PRODUCT	ALAMEDA COUNTY	STATE/CA	EPA/CURRENT	EPA/PROPOSED
VEHICULAR	total weight	total weight	total weight	total weight
lubricating oil	50/10	00/70	00/25	00/25-maximum
retread tires	retread tires do not need recycled content standards			
engine coolants, anti-freeze	60/10	00/70	reclaim-reuse	
SOLVENTS	50/10	00/70		
PAINTS	50/10	00/70		
TRANSPORTATION	total weight			
Traffic Cones	5/10		50-100/00	
Traffic Barricades	Type I and Type II only			
HDPE, PET, LDPE	50/10		100/80-100	
steel	50/10		25-100/00	
fiberglass	50/10		50-100/00	
PARKS/RECREATION	total weight			
Playground Surface	50/10		00/90-100	
Running Track	50/10		00/90-100	
LANDSCAPING	total weight			
Hydromulch - paper	50/10		00/100	
Hydromulch - wood	50/10		00/100	
Compost	50/10	00/80 household	trimmings, leaves, grass	

Markets for Recycled Products, January, 1996

Sources: EPA May 1995 Recovered Material Advisory Notice & March 1995 Proposed Paper RMAN
Alameda County "Measure D"
State of California Public Contract Code

Some California recycled content standards in Table 6-II have effective dates based on sunset clauses for related price preferences. Automotive lubricant, antifreeze, solvent and paint standards are effective until January 1, 1997. Paper, compost, plastic, and glass product standards are effective until January 1, 2001. Discussion is underway to relax the paint standard to manufacturing capabilities.

CERTIFICATIONS

The best method to get the recycled content you request is through certifications from your vendors. Certification forms should be included in each bid for recycled products. See Chapter 8: Bid and Contracting Procedures — Certification for further information and Exhibit 8-II for a certification format.

Remember that manufacturing runs vary because of feedstock quality and quantity. Over the course of a long contract, the level of recycled content may vary up and down even though you cannot tell by examining the finished product. You want to know the *minimum* your suppliers guarantee in their certifications, not the maximum they might achieve.

FLEXIBILITY TO ADJUST STANDARDS IN POLICY DOCUMENTS

Recycled content standards should not be written in stone in laws, ordinances or resolutions. Outdated standards will hamper the best efforts of purchasers. Instead, seek the highest available recycled content in your policy statements and stress postconsumer content.

Purchasing departments with the flexibility to adjust recycled content standards will achieve goals most easily. You should have the opportunity to raise standards and, if necessary, to lower them when markets change. Buyers can monitor the certification forms and other methods to obtain recycled content data as well as regional and national trends. See Chapter 8: Bid and Contract Procedures — Identification of Recycled Content, — Questionnaires and — Certifications for more information.

The 50/10 standard for printing paper explains why flexibility is useful. The national standard changed to 20 percent postconsumer with no total recovered material requirement in 1994. Although some 50/10 paper remains in the marketplace, it is scarce. If your government has strict 50/10 standards, your buyers are in difficulty. The policy document must be amended when flexibility for the future is not considered in the first place.

RECOMMENDED RECYCLED CONTENT POLICY CLAUSES

Legal counsel should be consulted before amending policy and purchasing documents to avoid unintentional conflicts and potential challenges.

General Recycled Content Clause: Use the following policy clause to stress demand for postconsumer content. It has neither percentage nor measurement requirements because these are variable.

It is the policy of [jurisdiction] to purchase source reduction products and/or recycled products containing the highest amount of postconsumer practicable or, when postconsumer material is impracticable for a specific type of product, containing substantial amounts of recovered material. Such products must meet reasonable performance standards, be available at a reasonable price and be available within a reasonable time.

Flexibility to Adjust Recycled Content Standards: Use this clause to establish standards and flexibility for purchasers to adjust recycled content standards over time.

The [insert purchasing entity] shall establish recycled content standards and is authorized to raise or lower them to meet the objectives of [jurisdiction's] policy. The decision to change any recycled content standard shall be substantiated in the annual report.

RECOMMENDED RECYCLED CONTENT CLAUSES FOR BIDS

These clauses establish requirements for bidders and contractors.

Minimum (Maximum) Recycled Content Requirements: Use this clause to state recycled content requirements in bid documents and establish flexibility regarding postconsumer and total recovered material content when bids are evaluated.

*The minimum [or maximum] recycled content requirements are as follows; however, less total recovered material will be accepted if substantially more postconsumer material is offered:
[insert product category(s) and recycled content standard(s)].*

Certification Requirements: Use this clause to establish requirements for certifying recycled content.

All bidders of recycled products must complete the certification form [insert where the form is found in the bid document]. For the products to be supplied, state the minimum percentage of recycled material according to total product weight, or fiber weight for paper, or total weight for the core material in products with variable facings. The minimum percentage may be higher than required by minimum recycled content standards found [in specifications or location of standards in the bid document]. When bidders do not submit certifications, the recycled content will be considered zero.

CHAPTER 7 PRICE PREFERENCES

Price preferences allow organizations to buy products that may cost more than the lowest bid. They exist to encourage social goals such as recycled products; small, minority or woman-owned businesses; and local suppliers.

Price preferences are expressed in percentages. You can apply them two ways. For example, if the price preference is 10%, you can add 10% to the price offered by the lowest bidder that does not meet the price preference criteria. Or, you can deduct 10% from the lowest bid that does meet the requirements. Once you select one of the two methods, use it consistently every time you apply a price preference.

PURPOSE OF PRICE PREFERENCES

Governments use competitive bidding to ensure fairness and reasonable costs for goods and services they buy. Most governments require purchasers to accept the lowest responsible and responsive bid. Responsible bidders are those capable of fulfilling the eventual contract. Responsive bids include all required information. Price preferences overcome the low bid requirement. Laws, ordinances or executive orders describe the goal to be accomplished and establish the price preference percentage.

CALIFORNIA STATE AUTHORIZATION

State laws frequently establish municipal purchasing parameters. The California State legislature amended state law to encourage use of recycled products and to permit local governments to use their choices of price preferences for recycled products. According to State of California Public Contract Code Section 12210(a):

Fitness and quality being equal, all local government and state public agencies shall purchase recycled products instead of nonrecycled products whenever available at no more than the total cost of nonrecycled products. All local public agencies may give preference to the suppliers of recycled products. All local agencies may determine the amount of this preference.

PRICE PREFERENCES FOR SOURCE REDUCTION PRODUCTS

Although some source reduction products cost more than alternatives, better ways exist to favor them. You would have difficulty achieving source reduction goals by applying price preferences for individual items. Policy clauses that require evaluation of life-cycle costs are a better alternative. Please refer to Chapter 2: Policy and Implementation Guidelines.

EXPERIENCE WITH PRICE PREFERENCES

Governments began using price preferences for recycled products twenty years ago. California was one of the first states with its initial 5% preference in 1977. These preferences successfully stimulated mass production of recycled products. Now many items with recycled content cost no more than virgin alternatives and, in some cases, the recycled item is less expensive. Demand is strong enough to cause periodic shortages in the supply chain today.

However, some items will be more expensive for the short-term. Although industries like paper built new recycled product capacity, they pass the cost of their new equipment along to customers in finished product prices.

California amended its legislation in 1989 to allow public agencies to set the levels of their price preferences to meet local conditions. During 1995 for instance, Alameda County buyers frequently could not find recycled computer and forms paper within its 10% price preference even though other products like re-refined oil and janitorial papers cost less than virgin counterparts. California Integrated Waste Management Board resolutions adjust price preferences for State procurements of recycled products every two years. Though not always needed, in 1994, they were:

- 5% janitorial paper (50/10)
- 5% retread tires and tire-derived rubber products (00/50)
- 5% automotive lubricants (00/70)
- 5% antifreeze (00/70)
- 5% solvents (00/70)
- 5% paints (00/70)
- 0% glass products (50/10)
- 10% printing papers (00/20)
- 10% all other paper products (50/10)
- 10% compost or co-compost with municipal-derived materials
- 10% plastic products except trash bags and rigid containers

PRICE PREFERENCE AMOUNTS

Finely-tuned percentages cause unnecessary work. Price preferences under 5 percent have no impact. Multiples of five are much easier to calculate than 6, 11 or 16 percent. The general ten percent price preference is most common nationwide because it is effective and easy to use. No government that tracks price preference expenditures for recycled products has found all prices increasing uniformly to its price preference level. Competition between vendors and manufacturers continues.

RAISING OR LOWERING PRICE PREFERENCES

Experience in the marketplace dictates whether you should drop or raise price preferences. Changes made during unsettled markets may not be accurate for the long term. You should not consider permanent changes without knowing the price differences in your location for several years. A history that spans strong and weak markets is most accurate.

Local suppliers provide another key indicator. Recycled product prices may cost more because vendors do not stock recycled items in wholesale quantities as they do with virgin counterparts. When your vendors special order in small amounts, they pass along their higher costs in your contract prices. In this case, the need for a price preference disappears when vendors know demand is strong enough to stock recycled counterparts.

FLEXIBILITY

When a jurisdiction has a strong policy in place to favor recycled products, it can put price preference decisions in the hands of its purchasing experts. They have the day-to-day and year-to-year experience with price differences.

Purchasing departments with the flexibility to change the price preference at a given time can align themselves with the marketplace. If a lower percentage results in lower bids for several succeeding annual contracts, you have confidence to reduce the price preference permanently. When bidders offer recycled products at lower costs than virgin counterparts, or when they bid recycled products only for several contract periods, you can eliminate the price preference for that category. However, markets are fickle. Flexibility allows you to reinstate price preferences when necessary.

You may want flexibility to change price preferences but unlimited authority may cause concern. Changes up to a stated percentage can be authorized. For example, if your price preference is 10%, authorize change by your purchasing department up to the entire 10%.

When you use the same percentage, the purchasing department can eliminate price preferences for product categories that no longer need price support. Two little words — “up to” — allow intermediate stages. Changes should apply to recycled product categories, not to individual items.

Sometimes, you need to spend a little more to meet recycled product goals. The City of Tucson introduced flexibility by allowing its purchasing manager to decide if the extra cost for a recycled product would have a significant impact on the overall budget when the bid price was above its 10% price preference. This discretion allows Tucson to buy a wide range of recycled items without spending too much. At the same time, the purchasing manager can reject high bids that cost too much overall.

DOING WITHOUT PRICE PREFERENCES

Many governments and agencies within governments do not use price preferences at all. Instead, they specify the level of recycled content they want in individual products and do not accept virgin alternatives.

Initial product research helps you make a decision like this. For example, the City of Hayward authorized its buyers to specify recycled paper because it had the facts. The purchasing manager researched price differences and the overall cost of paper to the city. Then he calculated the total extra cost and compared it to the costs of other things the city bought. His city spent more on bullets than it would pay to have recycled paper.

Price preferences are difficult, if not impossible, to administer in public works contracts for completed roads, bridges or buildings. You do not itemize costs for materials and supplies. Even your subcontracts for portions of a structure include all the management, labor, delivery and other costs. Requiring architects and engineers to specify recycled products and source reduction practices is your logical choice. You establish a level playing field for all bidders and introduce general contractors to the world of environmental alternatives at the same time.

RECOMMENDED PRICE PREFERENCE CLAUSES

The following clauses address different levels of flexibility. They depend on a strong general policy clause elsewhere in the policy document. You may want to use more than one clause to get all the features. If you have existing policies in one or more ordinances, codes or executive orders, review them carefully. You may cause unintentional conflicts if you do not revise other clauses. You should consult with your legal counsel before adopting new language to avoid future

challenges. Chapter 2: Policy and Implementation Guidelines — 5.0 Reasonable Price has more information.

Purchasing Without Price Preferences: Use a general clause to establish your policy when you want recycled products to be specified in bids without using a price preference at all.

Buyers shall buy recycled and source reduction products whenever possible.

General Price Preference Clause: Use this clause when you want a price preference but you do not want any flexibility when using the price preference.

This policy establishes a price preference of up to [percent] for products that contain at least the minimum of recycled content specified.

Flexibility to Spend More than the Price Preference: Use this clause when you want to spend more than the price preference allows if the impact on the overall budget is not significant. Sometimes these clauses authorize the agency with budget responsibility to make the decision.

The [insert purchasing entity] is authorized to purchase recycled products when the price differential is higher than the price preference allows when [insert authorized entity] determines in writing that the additional cost is reasonable and in the best interests of [insert name of the jurisdiction].

Flexibility to Change Price Preferences According to Circumstances: Use this clause when you want your purchasing department to adjust price preferences for product categories according to market conditions. The requirement to substantiate each decision protects the policy from individuals whose preconceptions do not conform to overall goals.

The [insert authorized entity] is authorized to raise or lower the price preference percentage up to [insert percentage] for recycled product categories in response to market conditions. The decision to change the price preference shall be substantiated for each product category.

GETTING ADVICE

If you are still unsure about using price preferences, consult with your neighboring communities. Talk with more than one. Many counties and cities have experience to share. In Alameda County alone, the county, Albany, Berkeley and Newark use price preferences. The City of Alameda, Fremont, Hayward, Livermore, Oakland and San Leandro buy recycled products without one.

CHAPTER 8

BID AND CONTRACTING PROCEDURES

You will not have to do all of the work outlined in this chapter every time you bid each product. Once you have the basics in place, you only have to review your documents to be sure that mistakes do not creep in over time. A simple check list can help you review documents. See Exhibit 8-1.

When you first draft clauses for bid documents, check them with your legal staff. Each jurisdiction has different purchasing policies and all clauses must be compatible to avoid problems. You may have to make some adjustments in the language but guard against altering the intent.

BEFORE PREPARING THE PURCHASING DOCUMENTS

Most of the work is done before you begin the bid process.

Evaluate Product According to Waste Management Hierarchy

The very first step is determining if source reduction or recycled content will apply to the product you are seeking.

Reduce: Is there some way to reduce the quantity, weight or toxicity of the product you are buying? Can the item be lighter weight or smaller in size without losing quality or performance characteristics?

Reuse: Chapter 13: Source Reduction Opportunities will help you address both reduction and reuse issues. For example, if the product you seek is durable, can it be reused later in its life cycle? Is there a durable, reusable substitute that can save you money over the long term?

If you are buying equipment or furnishings, are there suitable remanufactured products on the market? You can save money at the same time you reduce the waste stream by using remanufactured items.

Recycled Content: Can this product contain recycled content? If it is made with paper, plastic, or rubber, the answer is probably yes. Recycled oil, solvents and paints and many construction products are available too. You do not have to waste time seeking recycled metal products. Nearly every metal item you buy has the maximum practical level of recycled content. See Chapter 13: Recycled Product Opportunities for ideas.

Exhibit 8-I

Purchasing Document Review Check List

Customize this check list to match your own needs.

INITIAL STEPS

- Evaluate Product According to Waste Management Hierarchy
 - Exempt Categories of Products
 - Source Reduction
 - Reuse
 - Recycled Content
 - Recyclability

- Review Cooperative Purchasing Opportunities
- Review Product Research Files and Expand Vendor Base
- Prepare to Get Recycled and Virgin Price Quotes

SPECIFICATION REVIEW AND REVISION

- Eliminate Typical Obstacles
- Determine Critical Performance Requirements
- Identify Test Data Requirements
- Review or Set Up Qualified Product List (as necessary)
- Include Recycled Brands in Brand Name or Equal Specifications
- Adjust Packaging Requirements for Source Reduction
- Insert Source Reduction Requirements
- Insert Recycled Content Standard

PURCHASING DOCUMENT REVIEW AND REVISION

- Revise Boilerplate
 - Insert Policy Clause
 - Revise "All New" Clause
 - Remove "All or None" Requirements
 - Revise Warranty Clause
 - Revise Cancellation Clause for Certification of Reduction/Recycled Content
 - Revise Inspection Clause
 - Insert Source Reduction Packaging Clause

- Insert Recycled Product Additions
 - Definitions of Recycled Content
 - Identification of Recycled Content (as applicable)
 - Source Reduction or Recycled Content Questionnaire (as necessary)
 - Certification Form
 - Price Preference Clauses (as necessary)
 - Labeling Clause
 - Revise Delivery Timing
 - Reporting Requirements

CONTRACTOR AND GRANTEE REQUIREMENTS

- Insert Source Reduction Clauses for Paper and Other Products
- Insert Recycled Product Clauses
- Insert Reporting Requirements

Exempt Categories of Products: Your jurisdiction may have a list of exempt products or categories of products. If not, logic will help you save time. Live or natural products, like food, seeds, animals and plants as well as most health supplies, like pharmaceuticals and surgical supplies, do not have recycled content. Complex items, such as automobiles and electronic equipment, may have some recycled components but they are too difficult to track when there may be hundreds of parts. Until your program is very sophisticated, restrict your efforts to products made from a similar material or with a few components.

Recyclability: The last issue to cover is recyclability. Is the product you are buying recyclable in your collection program? If not, there may be a substitute that is. It may mean changing the colors you choose or changing the material from which the product is made. For more information, see Chapter 2: Policy and Implementation Guidelines — Designing the Implementation Guideline, Section 4.0: Precedence.

Review Cooperative Purchasing Opportunities

If your jurisdiction can enter cooperative agreements or adapt a contract from another jurisdiction, save yourself a lot of time by talking with your neighboring purchasers. You may be able to buy the recycled product you want through a contract that is already in place at the state or local level. If you do establish a contract, and others can buy from your contract, let your neighbors know. Refer to Chapter 12: Cooperative Purchasing.

Review Product Research Files and Expand Vendor Base

When you find a source reduction or recycled content opportunity but no cooperative agreement is available, review your files and product directories. Manufacturers can give you many recycled content and performance details. If directories do not identify vendors in your area, ask the manufacturers for their distributor lists.

Prepare to Get Price Quotes for Virgin and Recycled

When you plan to obtain bids yourself, remember to plan ahead for your monitoring needs. In jurisdictions with price preferences, you may have to get quotes for virgin and recycled counterparts to determine whether a price preference will apply. See Chapter 10: Monitoring Tools.

When obtaining telephone quotes, ask for virgin as well as recycled prices. Plan to structure bid documents to allow vendors to offer prices for recycled as well as virgin products. Vendors should be allowed to give you recycled only, virgin only, or prices for both depending on what they stock. Vendors should not be asked to quote prices on alternatives they do not offer.

REVIEW AND REVISE SPECIFICATIONS

The next step is the specification. Your recycled product requirements should not be higher than you expect from virgin counterparts.

Typical Obstacles to Recycled Content

There are a few issues to check immediately. Evaluate them and eliminate obstacles whenever they cannot be justified. Common barriers to buying recycled products include:

- requirements for virgin content only;
- requirements that recycled content cannot be used;
- light, or clear color requirements in non-paper products;
- high brightness levels for paper;
- low dirt, speck or flaw requirements for items when it does not matter for performance needs.

Performance vs Design Specifications

You do not need complex specifications for recycled products if you currently use simple specifications. If you are unsure about quality, describe the performance or results you require, not the design parameters. For example, it is better to state that trash can liners should not split or puncture within a certain time when loaded to the weight capacity than to describe the type of plastic, the thickness, and other technical details.

Test Data

You do not need any more test data than you collect for virgin products. In many cases you need nothing. Reputable manufacturers of recycled products maintain internal quality controls and their products meet the same criteria as virgin alternatives. Chapter 15: Recycled Product Examples suggests test methods for individual products. Chapter 9: Meeting Your Internal Customers' Needs has more general information.

Qualified Product Lists

You can develop qualified product lists if appropriate. Research your users' performance needs before developing the specification and test criteria for the item. Design a test program for vendors and let them know how to participate. All the products that meet the test criteria will be "qualified products." You can restrict bidding to "qualified products" or allow "approved equivalents," depending on how strictly you wish to enforce the testing program.

Brand Name or Equal Specifications

If you use brand name or equal specifications, you should include one or more recycled equivalents in the list of brand names you cite. Otherwise, vendors will offer the virgin brands most frequently and they may even suppose that recycled products would not qualify as “equals.” The essential characteristics you require should be listed as well as the brand names.

Packaging Specifications

Suppliers appreciate explicit directions about packaging if you specify your needs. State exactly what you want for: the type of pallet (size and four way entry if needed), loading tags and any special requirements for labels, package size and packaging materials.

There are some source reduction and recycled content issues. Standard size (48” x 40”) pallets are easiest to reuse in your own warehouses and in pallet reuse programs. Plastic stretch wrap instead of corrugated boxes saves weight and volume if you have a film plastic recycling program in place. California law requires glass containers to contain 35% recycled glass as of January, 1996, and requires rigid plastic containers to meet certain recycled content and/or reduction criteria. See Chapter 3: Federal and State Requirements — California Public Resource Code for glass and plastic container issues.

INSERT KEY PROVISIONS IN SPECIFICATIONS

Specification revision details will vary from product to product. However, there are two steps common to all.

Insert Reduction Requirements

If you have identified source reduction opportunities, insert the requirements in the specification. Examples include: lighter basis weights for paper; substituting light-, medium- or heavy-duty criteria for mil thicknesses in trash bags; and the edge crush test for corrugated boxes.

Insert Recycled Content Standard

For each recycled product you seek, put the recycled content requirement in your own specification. However, when you cite a standard specification (such as an ASTM or AASHTO specification), put the recycled content requirement in the bid document itself where you list the item number and description.

Your jurisdiction may have established its own recycled content standards or you can use state or federal standards. See the Exhibits in Chapter 6: Recycled Content Standards for recommendations and current standards.

You may want to allow yourself some flexibility when applying the recycled content standard. For example, you may miss an opportunity to get significantly higher postconsumer content if you have a firm requirement for total recovered material. Bear in mind, though, that if you do not state your intention to be flexible about total recovered material, you are held to the recycled content standard in your specification. For example, you can award the contract to the lowest bidder offering 40% postconsumer content instead of to competitors offering 50% recovered material with 10% postconsumer content. The high postconsumer bid will still be “responsive” if you state your intentions.

See Chapter 6: Recycled Content Standards for more detail. The section: “Minimum (Maximum) Recycled Content Requirements” has a clause to state your standards and retain necessary leeway.

REVIEW AND REVISE PURCHASING DOCUMENT

There can be more obstacles in the overall purchasing document than you find in the specifications. Review your boilerplate (standard terms and conditions) as well as any special terms and conditions or instructions used to purchase the product you are reviewing.

Many jurisdictions use the bid document as an integral part of the resulting contract. You want your policies and conditions to become part of the contract so you can enforce the source reduction and recycled content components in the future.

Boilerplate

Boilerplate may appear in pre-printed forms or in standard clauses used for all product and construction contracts. The following clauses have the most impact on recycled product purchasing.

Policy Clause: Prominently state your jurisdiction’s policy to buy source reduction and recycled products. It alerts vendors at the outset and informs them that the policy will be pursued vigorously.

All New Clause: Many product and construction bid documents have a clause that states or implies that all products supplied must be “new.” This clause can be interpreted to mean that individual items cannot have recycled content. It also eliminates remanufactured items. Such clauses should be revised to allow:

items made with recycled materials as well as approved remanufactured items, components and fixtures.

All or None Requirements: Bids that require vendors to offer “all or none” can eliminate bids for recycled products. This practice is less common than it once was. Some recycled product suppliers do carry all items. All solicitations should allow vendors to bid the products they can supply in good faith even if they do not have everything. You may have more than one contract to administer, but you will have much more success reaching your recycled product goals.

Warranty Clause: Some warranty clauses explicitly discriminate against recycled or remanufactured products or they may require that the original manufacturer’s equipment or supplies be used. Automotive and office equipment contracts, in particular, should not allow this. Review your warranty clause and adjust it as needed. You can use a variation of the following:

Equipment or vehicle warranties shall not discriminate against remanufactured products or components used for standard maintenance, nor against recycled products used in operation or maintenance of the equipment or vehicle.

Termination and Damage Provision Clauses: Most jurisdictions use these clauses to protect themselves from unsatisfactory service or products that do not meet specifications. These clauses should be extended to include certifications of recycled content or source reduction. Your vendors need to know what penalties they face if they substitute virgin products or items with less than the required recycled content during the course of the contract.

Inspection Clause: If you have reason to doubt the honesty of recycled content or source reduction claims from your vendors, you may want to inspect the vendor’s or manufacturer’s premises. An inspection clause gives you, or your designated representative, the authority to do so even if you never need it. A variation of the following is useful:

The [jurisdiction] or authorized representative may, at reasonable times and at the [jurisdiction’s] expense, inspect the plant or place of business and production records of a contractor, subcontractor or manufacturer which is related to the performance of any contract as awarded or to be awarded.

Packaging Clause: Alameda County, the City of Alameda, Berkeley, Fremont, and Oakland insert a source reduction clause about packaging in their contracts. This is a good option because it alerts vendors to your source reduction goals and encourages them to solve packaging waste problems creatively. Usually, it does not affect contract award. The following clause is adapted from Alameda County:

[Jurisdiction] is an environmentally responsible employer and seeks all practical opportunities for source reduction and recycling. [Jurisdiction] encourages its vendors to reduce waste volume and toxicity by using environmentally preferable packaging material whenever possible. Options may include backhauling product packaging to the supplier for reuse or recycling, shipping in bulk or reduced packaging, using vegetable-based inks for packaging printing, using reusable product packaging, or using recycled content or recyclable packaging material.

Recycled Product Additions to Bid and Contract Documents

You will need some special terms and conditions for recycled and source reduction products. It is a good idea to put these together in the same part of your bid documents.

When obtaining telephone quotes, you will have to explain new factors to your vendors. It is useful to have a faxable document on hand to send to vendors who give you prices by phone. That way everyone will be bidding with the same understanding.

Definitions: If you ask for recycled content, you must be explicit about what you want. These days, “recycled” can mean many different things. If you want postconsumer content, say so, and define what you mean. Be just as clear about what you mean for recovered material. Your jurisdiction should have definitions in its policy or implementation guidelines. See Chapter 5: Definitions for recommended language.

The definitions of recycled content must appear in the bid document and they must be circulated to vendors who provide telephone quotes.

Certification: Vendors should be expected to sign a binding certification of recycled content or source reduction. Certifications help you get what you ordered. Do not attempt certification of recycled content in complex products, like automobiles, however. It not reasonable to expect vendors to track many components from different suppliers in the finished product.

The certification should be signed by a responsible person in the company. Vendors who are distributors do not have first hand knowledge of recycled content or product source reduction characteristics. You should require these vendors to obtain certification signatures from the manufacturers and to give you the manufacturer's phone number so you can verify information directly if necessary. Either in the certification itself, or elsewhere in the bid document and contract, you should explain the actions your jurisdiction will take if the certification is not truthful.

Perhaps the best place for recycled content definitions is the certification form itself. That way, if there are any changes over the course of time, only one part of the purchase document must be brought up to date.

Exhibit 8-II: Sample Recycled Product Certification and Exhibit 8-III: Sample Source Reduction Certification can be used for guidance. See Chapter 5: Recycled Content Standards for more information and a recommended certification clause.

Some jurisdictions prefer to get completed certifications at the time bids are submitted so they can award the contract with confidence that certified characteristics will be met. Others require bidders to identify recycled content but only successful bidders must submit certifications. If you choose the latter case, state in the bid document that successful bidders must complete certification forms within a given amount of time before the contract award. One week is usually sufficient.

In addition, you should state your assumption that recycled content is zero if a vendor does not submit a certification form. Some jurisdictions had to declare vendors non-responsive when they did not submit mandatory certifications even though recycled content was zero. In a few cases, there were not enough responsive bidders for this reason alone and the bid solicitation process had to begin all over again.

The amount of recycled content may vary from one production run to another. Some companies assume that their average over a stated period of time will satisfy minimum recycled content requirements. Governments avoid allowing this practice through certifications. Products certified to have a minimum amount must contain that amount, particularly when price preferences are involved. Manufacturers simply certify to the minimum they will guarantee in every item shipped to fulfill the contract. Those who set recycled content standards take variability into account and usually set the standard percentage at the low end of the variation curve.

**Exhibit 8-II
RECYCLED PRODUCT CERTIFICATION**

This is to certify that all recycled products provided under this contract will contain recycled content as defined in this certification and percentages no less than the minimum amount specified for the items listed below.

Recycled Content by Fiber Weight for Paper and Total Weight for All Other

Bid Item Number	Brand Offered	% Postconsumer	% Recovered Material
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The undersigned understand that the [jurisdiction] may invoke damage provisions, terminate the contract, or both, if products supplied do not meet the above certified percentages and/or definitions.

Bidder Name _____
 Title _____
 Company _____ Phone _____
 Signature _____ Date _____

If the bidder is not the manufacturer, bidder must obtain the manufacturer's certification:

Manufacturer _____
 Name and Title _____ Phone _____
 Signature _____ Date _____

Definitions of Recycled Content applicable to this certification are:

Postconsumer Material [insert jurisdiction's definition]
 Recovered Material (insert jurisdiction's definition)

If no certification is submitted, recycled content is assumed to be zero for all products. Please copy and complete this form if more than one manufacturer is represented or if more product lines are needed.

Exhibit 8-III
SOURCE REDUCTION CERTIFICATION

This is to certify that all products [or packaging] provided under this contract will have the source reduction characteristics described below.

Bid Item Number _____
Item Description _____

Source Reduction Characteristic _____

Bid Item Number _____
Item Description _____

Source Reduction Characteristic _____

The undersigned understand that the [jurisdiction] may invoke damage provisions, terminate the contract, or both, if products supplied do not meet the above certified source reduction characteristics.

Bidder Name _____
Title _____
Company _____ Phone _____
Signature _____ Date _____

If the bidder is not the manufacturer, bidder must obtain the manufacturer's certification:

Manufacturer _____
Name and Title _____ Phone _____
Signature _____ Date _____

If no certification is submitted, source reduction characteristics are assumed to be zero. Please copy and complete this form if more than one manufacturer is represented or if more product lines are needed.

Identification of Recycled Content: California requires local agencies to obtain recycled content information. If you do not use certifications, or if you require certifications only from successful bidders, you must get this data another way. The easiest method is to ask vendors to state their postconsumer content (and/or recovered material) on the page where they give you prices. If you insert a line for the information and instructions about what to do, you will have the most success. Instructions should include a statement that recycled content will be assumed to be zero if no information is provided.

Questionnaires: When researching, some governments use questionnaires successfully in bid solicitations to obtain recycled content or other information. The non-mandatory questionnaire states that the information will not be used to determine bid awards. This is a good way to explore source reduction potential and recycled content in products when you are not sure recycled alternatives are available.

In addition, you can use this process to find out if your recycled content standards are accurate even if you use a certification method. Bidders may be unwilling to certify to content levels above minimum standards, but they may be more forthcoming in a non-binding statement.

Price Preference Clauses — As Applicable: Jurisdictions with price preferences should include explicit clauses in their purchasing documents. Vendors offering telephone quotes should be told about the price preference policy or they may not offer prices for recycled products.

Chapter 7: Price Preferences contains recommended clauses. The chapter explains flexibility and offers clauses for all pricing circumstances. Chapter 2: Policy and Implementation Guidelines has further information and an option to pay a bit more when no price preference policy is in place.

Delivery Timing: Fast delivery schedules may solve your emergency supply needs but they can play havoc with your recycled product expectations as well as the prices you pay. Be reasonable and fair with your delivery requirements for recycled products. This is particularly necessary for items that are not stocked in the same quantities as virgin counterparts.

Labeling: Products should be labeled with their recycled content to help educate your internal customers and your citizens. This is especially important for printed matter and promotional items that are distributed widely outside government facilities. Other products, like copy paper and re-refined oil, can be labeled on the packaging. It is prudent to insert a clause that requires recycled products you buy to be labeled with the postconsumer recycled content as well as the recovered material percentage when applicable in your specifications.

Vendor Reporting: If your monitoring program depends on vendor reports of recycled products they sell to you, you need a clause to establish mandatory reporting procedures. See Chapter 10: Monitoring Tools for more information and sample clauses.

You will need more detail from vendors than you report yourself. For example, if you report average recycled price preference differentials for all printing paper, you still need data by product type to develop the averages because price differentials vary from one type of paper to another. Plan your vendor reporting requirements accordingly.

All vendors track in-coming and out-going inventories and sales to specific customers for their own internal stocking and invoicing procedures. They should be able to give you the data you need in a format that is useful to you. At a minimum, you should require reports that total the number of units of the same item sold to all your departments during the reporting period. It is not much fun to search through a computer record of office supplies to add up each binder sold to twenty internal customers. You should require vendors to group like kinds of products together as well. Paper binders should be grouped with plastic-covered binders, for instance.

Vendor reporting requirements will differ from one contract to the next. If only a few products are on contract, the requirements will be simpler than if there are hundreds. Sophisticated vendors have computer systems of their own. Talk with them to develop the easiest system for both of you.

CONTRACTOR AND GRANTEE REQUIREMENTS

Some departments obtain more materials through contractors than they do through direct purchases. It is reasonable to ask contractors and grantees to adhere to your source reduction and recycled product policy. Requests for Proposals and Grant Applications should spell out the requirements.

Paper

Reduction: A clause should require contractors and grantees to use both sides of the paper whenever practicable. Single-sided blueprints and charts are understandable, but there is no reason for single-sided reports. This will save them money and postage while it saves you filing space. You will have more success if your own purchasing documents are double-sided.

With consulting contracts, you may want to request double-sided copies with one master single-sided copy until your own equipment can handle double-sided copies efficiently.

Recycled Content: Contractors and Grantees should be required to use recycled paper that meets your own recycled content standards.

Labeling: Printed documents should be labeled according to a standard format, such as *“printed on recycled paper.”*

Other Products and Practices

Source Reduction: All contractors and grantees should be encouraged to practice and report source reduction initiatives. Examples appropriate to the work being done will help them understand what you mean. Chapter 13: Source Reduction Opportunities should give you some ideas.

Recycled Content: If you have recycled content standards for individual products, you should require contractors and grantees to meet them in work they do for you. When you initiate this requirement, it is helpful to include a table of your recycled content standards in the solicitation document or grant application. Also include a contact to obtain up-to-date standards lists and additional information.

Reporting

You will have difficulty monitoring source reduction and recycled product use if you do not ask contractors and grantees to report. If they cannot be as explicit as vendors who sell you products directly, you can ask them to estimate their usage and activities. For example, printing contractors and copy companies should have good data about supplies used for your contract but a consulting or engineering firm may have to estimate its quantities.

CHAPTER 9

MEETING YOUR INTERNAL CUSTOMERS' NEEDS

Internal customers are the people in your agencies that actually work with the products you buy for them. Called “users” historically, they have a lot of practical experience and usually know exactly what they want.

Your users can help or hinder your program for recycled and source reduction products. If they support your objectives, you will find fewer barriers. Internal customers also have excellent suggestions about source reduction that can be shared.

EDUCATE USERS ABOUT YOUR PROGRAM

Internal customers, like most people, are familiar with recycling because they collect recyclables at home and in their workplaces. When they understand how products they use create the marketplace to sell recyclables, they will be more willing to experiment with new products. If they know how expensive waste disposal is, they will support your source reduction efforts, too.

Alameda County has an excellent educational program in place. Periodic meetings and seminars introduce agencies to recycled product information. Monthly buyer meetings and “green awards” stimulate initiatives.

Explain the Policy

With a willing audience, all you need to do is explain your government's policy. People may not know about the waste management and purchasing policies, just as you may not be completely familiar with the policies that shape the work of other departments. If your policy is mandatory, most internal customers will comply with it.

Reassure Internal Customers about Product Quality

People are proud of the work they do and they do not want their own performance to fail because of shoddy supplies. When users understand that most recycled products in the marketplace today meet the same quality and performance standards as the virgin products they are familiar with, resistance disappears.

Try Samples and Trial Orders

If your internal customers are hesitant about using recycled products, give them a chance to try samples. Hands-on experience helps them learn that the

alternative product works as well as, if not better than, the virgin item. The Alameda County Purchasing Department circulates a monthly “Office Supplies Recycled Products Bulletin” describing a new recycled item. An enclosed sample gives users a chance to try the product before ordering it directly from the office supply contract.

You can target a small group of internal customers for trial orders of items like re-refined oil, retreads or recycled anti-freeze. Ask these users to share their experience with others throughout your government. People are much more comfortable learning from their peers and many are pleased to serve as experts. Ask enthusiastic supporters to serve as expert contacts in your jurisdiction to answer questions about how they use recycled products.

Blind Tests

If you still face resistance after a good educational effort, try a blind test. Use a product you know has acceptable quality, do not gamble with something you have doubts about yourself. Provide the recycled counterpart without announcing it to a key group of customers. Only you should know that it has recycled content. Ask your users to report their experience with the new item. Usually, results are good. Report the outcome to the group. If you find new enthusiasts, ask them to serve as spokespeople to convert other departments. See Test Procedures in Chapter 15: Recycled Product Examples — Copy Paper for an example of a blind test. If you keep the test results on file, you can resolve future complaints with less effort.

Ask for Suggestions

Your users will learn about recycled products and source reduction ideas from contacts in their own fields. Always remember to ask if there are products or techniques that could be used by other departments.

Source reduction activities are already underway, but most people do not think of them in the waste context. Many existing strategies were introduced originally to save money or improve efficiency. When you equate waste savings with dollar and time savings, you get everyone’s attention.

Publicize Good Ideas

When you find good ideas, let everyone know. Your internal newsletters, e-mail, meetings and reports to managers, executives and elected officials are excellent media to share information about successes. Outstanding initiatives are worth a press release to the local newspapers.

Give Credit Where It is Due

People appreciate being recognized for their contributions. Highlight the individuals who step forward to share ideas and results with you. When your government employees realize that they can get good press for their use of recycled products and source reduction results, they will participate in your program more effectively.

INTRODUCING A NEW PRODUCT

You will need to talk with key internal customers when you prepare to introduce a new source reduction or recycled product. People with field experience know what will help them do their jobs most easily. When you engage users in helping to make a change, they will be more supportive.

Ask About Performance Requirements

You need to know what performance characteristics are most important to users. Begin at the simplest level. Ask them how they use the product and what problems they want to avoid. Internal customers can describe technical aspects as well. You can identify their legitimate concerns while you find out any perceptual barriers that might interfere with acceptance.

You can use the performance information when you review the product specification or design simple tests. Perceptions and fears can help you shape your educational effort when the new product is offered for use.

Have Information Ready

People will be curious about the new product. They will ask you questions as they explain what they need. If you have technical information on hand, you will feel more comfortable discussing the recycled or source reduction attributes. Manufacturers and distributors will send you descriptive information.

Bring in Outside Experts When Necessary

Many manufacturers and trade associations have personnel available to demonstrate their products or respond to questions and concerns. Other governments may have experts to loan through peer-match programs. You may want to arrange a special meeting or demonstration of key product categories. This has been particularly successful with automotive and construction products.

QUALITY CONTROL

Quality matters. Purchasers do not want to field complaints about products that do not work and users do not want problems with their supplies. Quality characteristics vary widely from one product to another so they cannot be described generally.

Recycled product manufacturers know they must compete with virgin counterparts. Good companies have internal quality controls and they can explain what their procedures are. Most companies use internal specifications, test their products regularly and have test data to share if you need it. Many test products to meet outside test standards and certifications. If you have difficulty getting test results or certification information from a company, you may want to seek other suppliers. Find out what competitors can offer.

You may find useful data from tests conducted at county or state testing facilities. Other jurisdictions may have tested a product you are considering. Many have contacts willing to talk about their experience. A few government agencies, like King County, WA, on its Internet web site, describe their users' experience with certain products.

You do not need much test data for the more common recycled products on the market today if you buy from responsible companies. They want your repeat business. However, bear in mind that you get what you pay for. It is not reasonable to expect first class performance when you pay fourth class prices.

SIMPLE USER TESTS

Few local governments have extensive testing facilities. It is not economically feasible to check all your products against complicated technical specifications. However, if you need to test product performance, you can ask your departments to conduct simple tests in use. Internal customers can give you excellent test suggestions for individual products based on how they use the item.

The Test Procedure sections in Chapter 15: Recycled Product Examples describe some test methods. See Trash Can Liners, and Trash Cans and Rolling Carts in particular.

A simple test does not measure design parameters. It measures performance. You should not need special equipment. For instance:

- A container, like a trash bag or a trash can, should be capable of holding the required weight for the required time without breaking.
- Printing paper or copy paper in stated quantities should run through properly adjusted equipment without jamming.
- Boxes should be able to carry the required weight and be stacked without the sides crushing during the required time.
- Playground surfaces should cushion falls sufficiently to avoid injury for a stated weight.
- Toner cartridges should make the required number of impressions without skips, varying tones or leaking toner.

All tests must have criteria that apply to all brands being tested so that each brand competes fairly against its counterparts. Criteria vary from product to product but values should be the same in each test of a product type. For example, you would use the same weight, time and quantity of samples tested.

The timing of the tests will matter too. Depending on your circumstances, you may want to test products at one or more stages:

- Before soliciting bids when you are researching products;
- Between the bid and the contract award to assess quality;
- Periodically during the course of the contract as a part of contract administration.

You ought to keep test results on file according to product type until the alternative products are accepted readily by your internal customers. Nothing is more convincing than a sheaf of documents proving performance.

RESOLVE CONTRACT PROBLEMS PROMPTLY

Just like virgin product manufacturers, recycled product suppliers can have bad batches that slip past their quality control procedures. Internal customers will appreciate your help in solving contract problems as quickly as possible. Find out exactly how the product fails. You must eliminate non-product issues before blaming the product itself. The following check list may help.

Equipment Problems

Example: Copy paper jams because the equipment is not properly adjusted

Improper Use

Example: Trash bags break because light weight bags are used in heavy weight applications

Poor Storage Before Use

Examples: Copy paper jams because it was stored where it absorbed excess moisture; plastic items crack or break because they were stored uncovered in the bright sun and degraded in ultra-violet light

Incompatible Equipment and Supplies

Example: Paper jams in one brand of printer but not in others

Equipment Repair Complaints

Example: A laser printer repairperson convinces user that recycled paper is responsible for repeated repair calls when the equipment is really at fault

Competing Sales Pitch

Example: A salesperson for a competing brand of virgin lubricating oil convinces user that the recycled brand will cause equipment problems

Internal Customer Perceptions

Example: A user thinks there are performance problems based on an assumption that the recycled products are inferior

Your best clue about actual product quality is the experience of other internal customers in your jurisdiction. It is a good idea to call around and ask people in other departments if they have the same functional problems.

Other jurisdictions may be using the same product too, particularly if there is a cooperative purchasing agreement in place. Talk with the buyer as well as neighboring users.

If the product is clearly at fault, contact the supplier immediately and explain the problem. Ask if there have been similar complaints. You should request prompt replacements from a different batch if you determine that your shipment is inferior in quality.

If problems continue, try another recycled brand before deciding to buy only the virgin counterpart. You would do the same for any virgin product you buy because the need must still be met.

CHAPTER 10

MONITORING TOOLS

Monitoring means tracking your activities and purchases to understand what you accomplish. You gather data to develop reports. Monitoring serves many purposes in procurement. You can use it to:

- track product usage and source reduction activity;
- follow contractor activities to ensure performance;
- understand exactly how you spend your money;
- find ways to obtain value and/or achieve goals more effectively.

Monitoring is essential to achieving recycled product and source reduction objectives. It provides an overall view of successes and identifies areas needing more attention. This allows for measurable results and practical deployment of resources.

OTHER BENEFITS

If you install monitoring tools for the first time because of recycled products, the tools can help streamline your workload in other areas too.

Decentralized or Delegated Purchases

Monitoring these purchases, such as small procurements and petty cash, helps you identify where you can consolidate requirements through volume buying and term contracts. This often results in better pricing and/or quality and saves administrative costs by eliminating duplicated work.

Actual Usage on Term Contracts

Identifying the actual usage of items on term or blanket contracts offers its own rewards. You can eliminate items that are not used. More importantly, you can develop more accurate estimates. Once bidders know that estimated quantities are reliable, they offer better pricing because they can anticipate the amount of business they will have if awarded a particular contract. Once a contract is in place, the supplier can offer better service and delivery since it has been able to stock according to dependable information.

ENVIRONMENTAL PURCHASING DATA REQUIREMENTS

You need data for recycled product and source reduction purchasing programs. See the lists below. If you insert spaces for the new data in your bid solicitation on the pricing sheet, or use certification forms, your bidders will give you most of the information you need in the same place.

MONITORING METHODS

You can begin monitoring recycled product and source reduction purchases by reporting only that information required by your policy. You can gather more complete information as you develop more sophisticated systems.

Data should be gathered for broad product categories, such as high grade paper, janitorial paper, compost and re-refined oil. You can work with one category at a time and refine your system as you go along. You do not need detailed records for each item (i.e., each type of file folder). You will need data for sub-categories where pricing and recycled content are similar like tissue paper, towels and napkins in categories like janitorial paper.

Manual Method

Many purchasing departments use tabulation sheets to assess bid results. You should include the new data items in these sheets if you use them. Otherwise, design a bid tabulation form for the recycled product categories you buy. Keep copies of these records, filed by product category, for future reporting needs. The data you need are:

- Successful Vendor, Order and Item Data.
- Quantity Purchased.
- Postconsumer % and/or Total Recycled Content %.
- Unit Weight.
- Recycled Unit Price.
- Equivalent Virgin Unit Price.
- Price Difference by Percent, if any (virgin price, minus recycled unit price divided by virgin price).
- Total Savings or Higher Cost (virgin price minus recycled unit price).

You should keep a running tally of total quantities and price differences as transactions occur in the same product category. This will save effort when reports are due. Automated spread sheets save even more time because they consolidate data and compute results. In decentralized systems, the same spread sheet format should be used by everyone involved.

CIWMB has a self-run diskette system to capture this type of recycled product data. Although designed for state agencies, it will be available to local governments too. See Appendix III: Resources — Monitoring Software.

Automated Method

Fully integrated, computerized systems can gather data as transactions occur. When developing or refining automated systems, you should define all elements of information you will need to produce detailed reports. The following list includes all data fields, not just those related to recycled product or source reduction purchasing:

- Order Number: The contract, agreement, purchase or other order number you assign to the transaction.
- Date: The date of the order.
- Vendor: The name of the vendor from whom you order.
- Buyer: The name of the person placing the order.
- Item Number: The commodity code, if any, you use.
- Description: Purchase description or specification of the item.
- Percentage of Postconsumer Content Contained in the Item
- Percentage of Total Recycled Content Contained in the Item
- Unit of Measure: The unit in which you order the item, e.g., each, dozen. If the unit of measure is box, case, carton, ream or other variable, designate the number of items in each unit.
- Unit Weight: The weight of the item.
- Quantity: The total amount you order.
- Unit Price: The price you pay for the item.

- Virgin Unit Price: The price of an equivalent virgin product

- Price Preference Percentage: The percentage of any price preference you allowed for a recycled product.
- Remanufactured Item, Reusable Item, Reduced Toxicity and Source Reduced Packaging: These distinctions allow for the capture of information related to source reduction.

Your automated system should have the capability to compute results for each reporting period. All but the final computation refer to data for each product category.

- Total Quantity: Total you purchased during the reporting period.
- Total Weight (total quantity multiplied by unit weight).
- Percentage of Price Preference Used (virgin unit price minus recycled unit price divided by virgin unit price).
- Total Cost (total quantity multiplied by unit price).
- Total Recycled Paid: The total amount you spend during the reporting period (recycled unit price multiplied by quantity).
- Total Virgin Price: The amount you would have spent had you purchased virgin products rather than recycled (virgin unit price multiplied by total quantity).
- Difference Between Recycled Product Price and Virgin Equivalent (total virgin price minus total paid).
- Total Difference: The difference in the total amount you spent buying recycled products rather than their equivalent virgin counterparts (total virgin price minus total recycled paid). A positive result would indicate that you are paying more for recycled products than you would for their virgin equivalents. A negative result would reflect better pricing for recycled products than virgin equivalents.

Automated systems also should have the ability to read ranges and greater than or less than data for the percentages of postconsumer content and the percentage of total recycled content. This will allow you to monitor the changes in recycled content. Reports comparing the prices and quantities of recycled products *versus* their virgin equivalents enable you to monitor progress toward goals and measure cost effectiveness.

MEASURE D MONITORING REQUIREMENTS

The Recycling Board needs information for its decisions to distribute money to jurisdictions in Alameda County in accordance with Measure D, Sub-section 64.120(B). You need data for reimbursement for price preferences or for funding of other recycled product or source reduction projects.

Reporting Purchases for Price Preference Reimbursement

Alameda County's experience with tracking and reporting every dollar spent for each variation of recycled product showed that this method was too time-consuming and difficult. Reporting expenditures in broad product categories is more reasonable and workable. Exhibit 10-I illustrates *examples* of broad categories and a standard reporting format.

**Exhibit 10-I
ANNUAL REPORT OF RECYCLED PURCHASES
FOR PRICE PREFERENCE REIMBURSEMENT**

	Expenditures for Recycled Products	Equivalent Cost of Virgin Counterparts*	% Difference (+/-)	\$ Claim
Envelopes	\$ _____	\$ _____	_____ %	\$ _____
Printing Paper	\$ _____	\$ _____	_____ %	\$ _____
Cut Stock Paper	\$ _____	\$ _____	_____ %	\$ _____
Computer Paper & Forms	\$ _____	\$ _____	_____ %	\$ _____
File Folders	\$ _____	\$ _____	_____ %	\$ _____
Trash Can Liners	\$ _____	\$ _____	_____ %	\$ _____
Asphalt Rubber	\$ _____	\$ _____	_____ %	\$ _____
Other: _____	\$ _____	\$ _____	_____ %	\$ _____
_____	\$ _____	\$ _____	_____ %	\$ _____
TOTAL	\$ _____	\$ _____	_____ %	\$ _____

* The equivalent cost of virgin counterparts means the cost to a jurisdiction if it did not buy the reported recycled product. Lower or equal costs result in 0 price preference claim.

Broad Product Categories: You should work with the Recycling Board to reach agreement on the products or classes of commodities on which to concentrate. This will allow you to prioritize your activities and focus your resources on achieving and reporting successful recycled purchases.

You may identify most broad product categories at the outset, but you need flexibility to determine additional categories as your program expands. Further, you need discretion to lump small quantity purchases into an “other” category and not track or report these individually.

Sufficient Data: Although you will report in broad product categories, you need data at a more detailed level to develop your reports. If you depend on vendor reports, they must report by smaller product categories. For instance, if you are reporting “maintenance supplies,” work with your vendor to report by type such as toilet tissue, folded towel, roll towel, toilet seat cover, facial tissue and so forth.

Useful Categories: Successful monitoring efforts focus on product categories where recycled content is reasonable to expect and where purchasing preferences affect the market place. All metal items, for instance, contain maximum levels of postconsumer content for economic reasons alone. Monitoring hundreds of metal items would be time-consuming but have no impact on recycled content percentages. Other items, like food, pharmaceuticals and surgical supplies, will never have recycled content.

Simple Products: Track products made primarily with a single material or a few components such as binders. Although some complex products like automobiles and office equipment can contain recycled material, vendors have difficulty computing overall recycled percentages. Market economics rather than procurement initiatives drive the switch to recycled content.

Establishing Prices for Virgin Products: For reporting purposes, you can base the prices of virgin counterparts for recycled products on bid prices or periodic market surveys. If you do not obtain virgin product prices during the bidding process, you can get written or oral quotations from at least three companies for identical quantities and delivery schedules. You would use the lowest price you receive for comparison with the recycled product.

You can determine the method to establish virgin prices on a case-by-case basis at the time of the bid:

- As appropriate on annual contracts, agreements and/or blanket orders, request both virgin and recycled product pricing during the bidding process;
- On annual contracts, agreements and/or blanket orders for recycled products only, survey the market for virgin product prices by contacting at least three suppliers at the time you establish the annual contract;
- For items not covered by annual contracts, agreements and/or blanket orders, either request both virgin and recycled product pricing during the bidding process or survey the market for virgin product prices by contacting at least three suppliers;
- If you do not, or cannot, obtain virgin prices, the recycled product is the low cost alternative and no price preference applies.

Monitoring Purchases: You can obtain the quantity data to determine total price preference expenditures by one of the following methods:

- If you have an automated purchasing system that captures all of the data, use it to report the products actually purchased during a given period;
- Require the contract holder (vendor) to report usage and price differentials;
- Review your manual records and compute the totals.

Vendor Reports: To make vendor reports a viable source of information for recycled product purchases, you should include detailed, specific reporting requirements in both your bids and resulting agreements. You should work with your legal counsel to develop appropriate language for bids, contracts and agreements. Recommended clauses are at the end of the chapter.

You can incorporate the language for reporting requirements into new contracts and agreements as they occur. You also may want to add this requirement to existing contracts, but could encounter resistance from some of your vendors. You will need to work with current and potential vendors to educate them about the new requirements.

Access to Vendor Files: If an audit shows an inaccuracy in reported information, you need a method to verify the finding. You should review your

standard terms and conditions to ensure that you have access to vendor files and records for auditing purposes.

Reporting Formats: You may want to design a report format for each contract or require that the reported data be submitted on disk in a format consistent with your jurisdiction's automated system, if any. This would facilitate combining information from various sources to report to the Recycling Board.

Delegated Purchasing: If your agencies have delegated authority for making small purchases, you should direct them to "buy recycled" as much as possible and make lists of recycled products and suppliers available to them. However, considering the time necessary for you and agency personnel to track small quantities, you may want to delay reporting on delegated purchases until you have fully automated systems to support your efforts.

REPORTING PROGRESS FOR OTHER REASONS

You will not have to report the same level of detail when reporting progress for reasons other than price preference reimbursement. Annual data compared to the previous year is sufficient.

You should report recycled and source reduction purchasing initiatives separately because the potential cost savings of source reduction products may be masked by recycled products costs. The number of product types reported in broad categories is important because it shows the rate of program expansion. Exhibits 10-II and 10-III on the following page are examples of reporting formats.

Exhibit 10-II
ANNUAL REPORT OF RECYCLED PURCHASES

	1994	1995	% Change
Total Recycled Product Expenditures	\$ _____	\$ _____	_____ %
Total Purchasing Budget	\$ _____	\$ _____	_____ %
% Recycled Products of Total Purchasing Budget	_____ %	_____ %	_____ %
Additional Money Spent for Recycled Products	\$ _____	\$ _____	_____ %
Number of Product Types	_____	_____	_____ %

Exhibit 10-III
ANNUAL REPORT OF SOURCE REDUCTION PURCHASES

	1994	1995	% Change
Total Source Reduction Product Expenditures	\$ _____	\$ _____	_____ %
Total Purchasing Budget	\$ _____	\$ _____	_____ %
% Source Reduction Products of Total Purchasing Budget	_____ %	_____ %	_____ %
Total Savings or (Cost) for Source Reduction Products	\$ _____	\$ _____	_____ %
Number of Product Types	_____	_____	_____ %

You should include a list of the recycled and source reduction product categories you bought during the reporting period. You can include relevant information in a brief narrative. For instance, you might note when you have reduced or eliminated quantities of an individual product within a broad category due to a source reduction initiative. This would not be apparent if you merely reported the numbers.

Market conditions or demographic changes in a government can result in radical year-to-year changes. For example, severe shortages or surpluses of recycled products can cause abnormal increases or decreases in costs. Reorganization and changes in the number of government personnel cause fluctuations, too. You could report circumstances like these to explain unusual differences in purchasing trends from year to year.

USING MONITORING TOOLS FOR POLICY ANALYSIS

Recycled product and source reduction purchasing programs are not static. You can use your records, certification forms and reports for periodic evaluations. If you need policy changes, you can defend your decisions when you have supporting data.

Recycled Content Standards

Certification that vendors meet your recycled content standards may not be enough. If you encourage vendors to report the actual minimum percentages of recycled content in products they supply, you can monitor changes in the marketplace. A non-binding questionnaire as well as the certification form will identify differences. This step is only necessary if you have reason to believe your recycled content standards are outdated. The questionnaire will give you information and records to substantiate your decision to raise or lower recycled content levels. Refer to Chapter 6: Recycled Content Standards.

Price Differences

Price differences between recycled and virgin counterparts change as your vendors begin to stock wholesale quantities of recycled products, when industry technologies improve and when recovered material supplies fluctuate. By comparing price differences for several years you can adjust your cost estimates to market conditions.

If you use price preferences, you will have data to substantiate dropping, raising or eliminating preferences for specific product categories. A simple table showing the price difference by percentage from year to year or reporting period to reporting period is a powerful analytical tool. However, very unstable markets can occur at any time for reasons you cannot predict. You will need flexibility to

restore price preferences if necessary. Refer to Chapter 7: Price Preferences for further information.

RECOMMENDED VENDOR REPORT CLAUSES

Both Recycled and Virgin Counterparts

If you use vendor reports as a monitoring tool, use this clause when you expect competition between virgin and recycled counterparts on the bid:

Recycled Reporting Requirement: The vendor shall report the subtotal dollar and unit volume of recycled and nonrecycled [insert item, commodity, class, category] supplied to each department as well as the total dollar and unit volume of [insert item, commodity, class, category] sold to the jurisdiction under this blanket order [contract, agreement]. For each recycled [item, commodity, class, category], the vendor also shall report the average percentage cost difference (+/-) between the recycled products and their virgin counterparts and the total equivalent cost of virgin counterparts based on these percentages.

The reports shall be typed, show the name of the firm and the contract/agreement number, and be signed by the vendor indicating that the vendor certifies the accuracy of all provided information.

The vendor shall submit reports to [specify whom] at [include address] within 30 days [or other time period] following the end of each completed [quarter, 6 months, year]. Failure to provide complete, accurate and timely reports may result in the [jurisdiction] withholding payment until such time as the vendor has remedied the failure to the satisfaction of the [jurisdiction].

Recycled Products Only

If you use vendor reports as a monitoring tool, use this clause when your specifications require recycled content. You should supplement vendor data with virgin prices obtained through surveys at the time of the bid:

Recycled Reporting Requirement: The vendor shall report the subtotal dollar and unit volume of recycled [insert item, commodity, class, category] supplied to each department as well as the total dollar and unit volume of [insert item, commodity, class, category] sold to the jurisdiction under this blanket order [contract, agreement].

The reports shall be typed, show the name of the firm and the contract/agreement number, and be signed by the vendor indicating that the vendor certifies the accuracy of all provided information.

The vendor shall submit reports to [specify whom] at [include address] within 30 days [or other time period] following the end of each completed [quarter, 6 months, year]. Failure to provide complete, accurate and timely reports may result in the [jurisdiction] withholding payment until such time as the vendor has remedied the failure to the satisfaction of the [jurisdiction].

These clauses allow you to be as explicit as you want to be. In some cases you will need information according to product category, in other cases you may want data about each item.

If you do not need to track compliance by each department because you can get the information another way, you can require vendors to report only the totals for the jurisdiction as a whole without the subtotals for each department. Reports will be easier for you to use if vendors combine like items in the same part of the report and put the jurisdiction totals at the end of the subtotals.

CHAPTER 11 LOCATING SUPPLIERS AND ENHANCING COMPETITION

You may need to locate new suppliers to purchase some recycled and source reduction products or you may search for new suppliers because you want more than one source for the products you purchase. Increasing the number of vendors enhances competition. That means better prices, quality and service, while you help to develop recycling markets and encourage source reduction at the same time.

It is easier to find suppliers for recycled products than ever before. Most office supply, janitorial supply and paper vendors stock recycled alternatives. You may need to find new vendors for other types of products but there is more than one source for nearly everything.

Finding suppliers for source reduction products is more challenging but sources are increasing all the time. People are just beginning to understand how to incorporate source reduction attributes into products. When you compare how little source information for recycled products existed in 1988 and the many directories available now, you know that help with source reduction products will be published in the near future.

There are many sources for developing vendor lists for recycled and source reduction products. Appendix III: Resources in this manual provides an extensive list, including:

- A broad recycled product section, including general directories and those devoted to specific products or materials.
- Source reduction product information, including on-line and printed formats.
- Sources which provide many kinds of buy recycled information, such as government offices.
- Newsletters and magazines which provide leads to products through articles and notices.
- Recycled product contracts currently in place, which provide both data and sources for buying recycled products as well as potential opportunities for cooperative purchasing.

Chapter 15: Recycled Product Examples provides source leads for each example. These are general unless sources are difficult to find.

SOURCES FOR VENDORS

Sources to consider when searching for appropriate vendors follow. The publications, organizations and programs listed here are explained in more detail in Appendix III: Resources, along with complete contact information.

Current Vendors

Talk to your current vendors and suppliers. Increasingly, they stock recycled products as well as nonrecycled. They also may be knowledgeable about source reduction products. If they do not carry these products already, they can try to get them. If you make clear your commitment to buying recycled, your vendors may take extra steps to keep your business.

If your jurisdiction is buying promotional materials, ask advertising specialties vendors if they can provide recycled content products instead of nonrecycled. This particular business segment is often flexible and innovative about finding new sources for recycled products or incorporating recycled content into previously nonrecycled products.

Directories

The most comprehensive recycled product directory is the Official Recycled Products Guide (RPG). This is a national directory and does not always list local distributors. Buyers can contact the manufacturers in the guide to find appropriate local distributors. The RPG also includes a short section on remanufactured, reused and reprocessed products. The California Integrated Waste Management Board (CIWMB) has entered a licensing agreement with RPG to provide its sources on the Board's Internet web page, beginning in early 1996.

Many other state and regional directories exist, most printed and some on-line. You can find directories dedicated to specific types of products as well, including paper, plastic, rubber, re-refined oil and building and construction products.

Other Departments in Your Jurisdiction

Check with other buyers within your government. They may have vendor information that is not shared automatically, particularly in decentralized systems. If buyers in several departments purchase similar products for their own offices, you may be able to set up a network for sharing sources and information.

Recycling Coordinators

Your jurisdiction's recycling coordinator or solid waste department should be an excellent source of leads. Recycling coordinators in particular have access to many kinds of information on new recycled and source reduction products, and usually have many contacts for getting the data they may lack.

Government Agencies

Federal: The U.S. Environmental Protection Agency provides lists of vendors for some of its designated products. Besides printed versions, some of these lists are available on-line on its Internet web page.

State: The State of California allows local governments to buy from most of its purchasing contracts, under several different programs. Buyers will have to research which contracts provide recycled and source reduction products, but those contracts have appropriate suppliers. They may have excellent pricing because the State buys most products in large quantities.

The State's recycled product contracts are scheduled for future listing on Infocycle, the on-line bulletin board system maintained by the State of California's Department of Conservation/Division of Recycling (DOC).

DOC also publishes Market Watch, a printed vendor database for a wide variety of organizational and consumer products. It maintains a lending library in addition to Infocycle, its on-line bulletin board service. It provides the Buycycle "Guide to Guides," which lists recycled product resources available throughout California. DOC staff promote buying recycled products and market development, particularly for products made from materials covered under California's bottle bill. Many are well-versed in source, performance and recycling issues regarding specific products or categories of products. DOC also purchases many recycled content promotional items and should be able to provide leads to appropriate vendors of advertising specialties.

The California Integrated Waste Management Board (CIWMB) oversees many of the State's procurement laws and researches issues in materials markets and buying recycled products. It plans to include an extensive database of recycled product vendors on its Internet web page in 1996. Many of the Waste Board's staff have in-depth knowledge of specific product areas, including paper, automotive, compost, plastics and others, and are generous in sharing that knowledge. CIWMB also operates CALMAX, a statewide waste exchange.

Local: The staff at the Alameda County Waste Management Authority maintains a database of product vendors, including local printers and copy shops that provide recycled paper. The listing is national but focuses especially on vendors in Alameda County. The Alameda County Purchasing Department circulates its list of recycled product contracts and encourages others to use them.

You should network with other local buyers in your county as well. Some of them may be buying the type of product you need and know of sources for recycled versions.

Local Governments Outside Alameda County: The recycling coordinators and solid waste staff in several California cities and counties, including Los Angeles, Santa Cruz and San Jose, are generous about sharing their vendor lists. The Association of Bay Area Governments maintains a computer on-line listing of local bid requests and requests for proposals. Listing your bid solicitations on this service can broaden your publicity efforts, notify vendors who otherwise might not contact your office, and suggest opportunities for cooperative purchasing.

Recycling programs and purchasers in some governments around the country provide recycled product information useful to everyone. The Clean Washington Center (Seattle) publishes directories as well as reports on specific products. King County, WA has its own Internet web page with extensive recycled product procurement information. Wisconsin's purchasing department has an on-line bulletin board system with extensive recycled product listings, as well as a list of recycled papers with recycled content certified by their manufacturers.

Publications and On-Line Resources

In addition to listing product supplier directories, Appendix III: Resources contains many listings for publications, organizations and agencies that provide leads to recycled and source reduction product sources. Magazines and newsletters may report stories on companies or products that contain source leads. Organizations may provide source information directly or be generous in discussing leads when you call them.

Conferences

Many recycling conferences and workshops throughout the year include recycled product vendor exhibits. The Alameda County Waste Management Authority sponsors Getting Down To Business, an outstanding buy recycled conference that showcases many local vendors. The California Resource Recovery Association (CRRA) holds an annual conference that includes many product vendors.

CRRA and the CIWMB present many one-day workshops on specific topics, including particular product issues, throughout the year. Several California cities and counties hold excellent seminars and workshops, including Los Angeles, San Francisco, Sacramento and San Jose.

Recycling associations in neighboring states hold conferences that may attract vendors who can sell to your jurisdiction. Even if you cannot attend these workshops and conferences, you can often get vendor exhibit lists afterwards.

Professional Purchasing Associations

The local chapters, satellites and affiliates of professional purchasing organizations are good sources of information too. They include source reduction and recycled product in meeting discussions and have good networking suggestions. Individual members will have vendor lists to share. Contact the following local offices:

- California Association of Public Purchasing Officers
- National Association of Purchasing Management
- National Institute of Governmental Purchasing
- National Contract Managers Association
- National Association of Education Buyers
- National Purchasing Institute

Other Organizations

The Recycled Paper Coalition, headquartered in the Bay Area, promotes the corporate use of recycled paper and paper products. Many product and professional associations, including those for tires, compost, building and construction may provide vendor sources.

Buyers for local corporations may have distributor sources for products that are difficult to locate. Some companies have environmental advisors or belong to environmental roundtables that address recycled product purchasing.

Cooperative Buying

Consider cooperative buying whenever possible. Other buyers may already have a good vendor list for the recycled product you plan to buy. Pooling contracts to increase the quantities requested may also result in better prices. State agencies provide access to both state and federal contracts, usually at very favorable prices. Other local governments may provide good opportunities for collaboration as well. See the following Chapter 12: Cooperative Purchasing for more information.

CHAPTER 12

COOPERATIVE PURCHASING

Cooperative purchasing is a method to join with other jurisdictions to buy identical or very similar products. Centralized purchasing within a community is much the same. Within a community, needs are combined in a single invitation for bids. All departments order the quantities they need from the resulting contract.

When buying cooperatively, a “lead agency” is the central purchaser for several jurisdictions that order from the same contract. The lead agency may be different for each commodity. Cooperative purchasing is useful for recycled products because it reduces duplicate research and expands total product demand.

PURPOSES OF COOPERATIVE PURCHASING

Cooperative purchasing has numerous benefits. By joining with other people who are doing exactly what you do, you can save time and money. The key advantages and disadvantages are:

Lower Costs: Unit costs go down when the volume of purchases increases.

Lower Administrative Costs: Only the lead agency prepares, advertises and analyzes the bid and administers the resulting contract. Participating jurisdictions simply determine the quantities they will need during the term of the contract and share their vendor lists.

Increased Volume of Recycled Product Purchases: The more jurisdictions involved, the more recycled products are used.

Increased Availability of Recycled Products: Some vendors require minimum orders before stocking recycled products. Others simply pass along the costs of special ordering small quantities of recycled counterparts to the buyer. When cooperative purchasing increases total demand, vendors may relax minimum quantity requirements to individual users because they have the stock on their shelves.

Standardized Definitions and Recycled Content Percentages: With more jurisdictions using the same contract, fewer variations of the same product will be required. This helps vendors to stock products with the same recycled content requirements.

Local Preferences Do Not Apply: There is one major drawback for some communities. There is no guarantee that a local company will win the bid. Local preferences do not apply in circumstances when the participating jurisdictions stretch beyond the borders affected by local preference policies. Thus, local preferences hinder recycled product purchasing.

TYPES OF COOPERATIVE PURCHASING

Cooperative purchasing can be formal or informal.

Informal Cooperative Purchasing

The informal method is simple. First, determine if you have the legal authority to buy from someone else's contract. Then, when you are ready to buy particular products, seek organizations that have the products on contract. You merely review the contract to be sure the products, prices and terms meet your needs, then establish separate billing and delivery requirements with the vendor holding the contract.

Vendors have the right to accept or reject potential sales to other jurisdictions. Many county, state and some city contracts allow sub-divisions of governments to buy from them. These organizations circulate lists of such contracts to interested parties. Most jurisdictions in Alameda County use this type of cooperative purchasing.

If the process is successful, it can continue indefinitely with the organization that initiates the bids. If you do plan to continue this way, be sure to share your quantity estimates with the "lead agency" so you all can take advantage of lower unit costs for higher volumes.

Formal Cooperative Purchasing

Formal cooperative purchasing arrangements take more time initially but they will continue to work over the long term. Each participating jurisdiction must give up its purchasing autonomy to be part of the general agreement and each participant must plan ahead to coordinate the timing for the bid. There are ten critical steps:

1. **Determine your legal authority** to buy cooperatively.
2. **Select the lead agency** to prepare specifications, solicit and evaluate bids, administer the contract and monitor participation.

3. **Survey potential participating jurisdictions** to determine interest and product requirements. Since bidders will not offer lower prices unless they are confident of the quantities, everyone who agrees must participate.
4. **Obtain information from participating jurisdictions**, including: quantities, product requirements, purchasing schedules, delivery points and potential vendor lists.
5. **Research recycled product opportunities** and requirements and obtain information from potential vendors.
6. **Prepare and advertise the bid.** Determine whether vendors must respond to all or part of the bid and whether one or multiple contracts will be awarded. Determine whether the vendor will be required to report actual sales quantities for each participant to one or more agencies.
7. **Obtain and evaluate the bids.**
8. **Resolve disputes** and any implementation difficulties.
9. **Report** all contract details to all participants and publicize the results.
10. **Analyze** the successes and failures to prepare for the next bid.

SOURCES

There are many opportunities for cooperative purchasing open to governmental agencies in Alameda County. You will find addresses and contact information in Appendix III: Resources under General Recycled Products — Recycled Product Contracts in Place.

Existing contracts are good sources for comparative price information too. Bear in mind that prices vary according to time and quantity. Just because a large organization achieves a specific price six months ago, you should not expect identical pricing for your own bid.

Alameda County

The Purchasing Department in the General Services Agency actively seeks recycled products. Many of its contracts allow outside agencies to use them. On request, staff will send a list of recycled product contracts to all jurisdictions allowed to buy from them.

Alameda County Cooperative Purchasing Group

This organization seeks to establish formal cooperative purchasing agreements. Formed several years ago, it is not very active now. The local preferences among the interested jurisdictions are difficult to overcome.

Association of Bay Area Governments (ABAG)

ABAG lists invitations for bids on-line to ensure widespread advertising in the Bay Area. It includes all types of bids for goods, supplies, equipment, consulting, construction, franchises and leases. Recycled products are not identified separately. ABAG would be a last resort because only current bids are listed, not resulting contracts. You can check to see whether the bid offers vendors the opportunity to sell to outside agencies and explain your interest in joining it to the contract officer before the contract is awarded.

California Communities Purchasing Program

Administered by the California Statewide Communities Development Authority, this is a joint effort by the League of California Cities and the California State Association of Counties. Its contracts are open to local governments and special districts in California. However, only a few contracts included recycled products in 1995 and contract descriptions do not feature recycled products.

California Multiple Awards Schedule (CMAS)

The State Department of General Services Procurement Division has methods in place to purchase from Federal Supply Service schedules. Many vendors extend their contracts to local agencies. The State bills local agencies 1% of the value of each order to cover administration costs. No indication of recycled content appears in the listings. Buyers must research recycled products through the vendors.

California State Cooperative Purchasing Catalog

The State Department of General Services Procurement Division also allows local agencies to buy from state contracts. It distributes a catalog to interested agencies. The catalog does not identify recycled content. However, the state is expanding its recycled product purchasing in compliance with state law so contracts will be in place.

RECOMMENDED CLAUSES FOR COOPERATIVE PURCHASING**Policy Documents**

The [purchasing entity] is authorized to participate in, and encourage other public jurisdictions to participate in, cooperative purchasing agreements.

Bid and Contract Documents

Alameda County uses the following clause successfully to encourage cooperative purchasing agreements with its contractors.

Other tax supported agencies in the State of California who have not contracted for their own requirements may desire to participate in the contract. The contractor will be requested to service these agencies and will be given the opportunity to accept or reject the additional requirements. If the contractor elects to supply them, orders will be placed directly by the agency and each agency will make payment directly to the contractor.

Cooperation Saves Time And Money

CHAPTER 13

SOURCE REDUCTION OPPORTUNITIES

The concept of buying for source reduction is far less developed than the concept of buying recycled products. There is no “standard” to follow in choosing products, as there is when buying recycled, although the definition of a source reduction product provides parameters.

Buying with source reduction in mind takes advantage of creativity, long-term cost savings, and just plain common sense. It is as much about reviewing processes as it is about looking for specific products. There are characteristics you should look for when buying products in order to reduce waste. But there are also processes you should follow that can reduce or eliminate the necessity to buy the product at all.

DEFINITION

The following definition for “Source Reduction Product” includes the most important factors to analyze when choosing products.

“Source Reduction Product” means a product that results in a net reduction in the generation of waste compared to the previous or alternate version and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

Some people use the terms “waste reduction” and “source reduction” interchangeably, but they are not the same thing. “Waste reduction” includes recycling and other waste management strategies to decrease disposal quantities as well as reducing waste at the source. “Source reduction” is a subset of waste reduction and refers to reducing waste by not producing it at all. It starts at the source — before products are used — and addresses ways to prevent waste from ever even happening.

“Pollution prevention” is sometimes called source reduction because it deals with minimizing the use and production of hazardous substances. This chapter deals with source reducing toxins in a purchasing context but not with other processes covered under hazardous waste reduction programs.

There are a few publications available which are dedicated to source reduction. Those readers starting new source reduction programs will particularly appreciate the Minnesota Office of Waste Management’s *Source Reduction Now*. It includes organizing strategies, evaluation and measurement

suggestions, and case studies. See Appendix III: Resources. You can expect more resources in the future as the field develops. There are also ideas for source reduction in specific product categories included under “Reduction Opportunities” in the product examples discussions. See Chapter 15: Recycled Product Examples.

PRECEDENCE

Source reduction is at the top of the solid waste and purchasing hierarchy: Reduce, Reuse, Recycle. It is true that recycled products reduce resource demand and pollution impacts in the production and solid waste management cycle. However, reducing the materials needed to make the product, extending the product’s lifetime, or eliminating the product altogether is clearly more effective.

You should strive to achieve the highest level of the hierarchy possible. It is even better to combine levels. A product that can offer both source reduction and recycled content offers greater environmental and solid waste savings than one of the characteristics alone. In some cases, you may find an item which uses less material than its predecessor product, is reusable, and also contains recycled material, thereby combining all three levels of the purchasing hierarchy.

PURCHASING SOURCE REDUCTION PRODUCTS

In most cases, you can identify a source reduction product by how well it meets the criteria in the definition. When evaluating products for source reduction potential, start at the top of the solid waste hierarchy and work down to determine which characteristics fit the product.

Reduce — Purchase Less To Save More

Eliminate Unnecessary Products: Judicious purchase of some products can eliminate the need for others.

Letterhead: Alameda County adopted a brilliant way to eliminate outdated letterhead. County staff write communications with templates in word processing software. When a letter, memo or fax is printed, the template supplies the letterhead design. Even the recycled paper statement is incorporated. This practice eliminates leftover stock when offices move or personnel change.

Forms can be generated directly from word processing templates rather than purchasing pre-printed forms which go out-of-date.

Annual reports and major documents can be offered on disk to interested recipients. The California Integrated Waste Management Board reduced the print run for its annual report by culling its distribution list and offering the disk versions sought by 200 people.

Solar powered equipment, including calculators, eliminates the need for batteries.

Rent, Lease, or Contract: Some equipment is used so infrequently that renting may be a wiser alternative than purchasing. Other equipment may require costly maintenance and/or staffing. When you rent instead, the vendor usually provides maintenance, reducing your jurisdiction's responsibility. Some products offer valuable maintenance options under a leasing or service contract.

Carpets: A creative product/service now available is leasing carpets rather than buying them. Under the lease, the vendor replaces only worn areas rather than the whole carpet. This serves the dual purpose of minimizing wasted carpet while also keeping your carpeting in top condition all the time. These services frequently collect used carpeting for recycling as well.

Copiers and printing presses: You may contract for copying or printing services, thereby using equipment essentially "shared" by many clients. You can require the contractor to implement source reduction policies consistent with your goals for any services they provide to your jurisdiction.

Buy Durable Products: Replace disposables with durable products which may be made with different materials than comparable alternatives. You may still buy the product, but in greatly reduced quantities. Eliminating the need for many duplicates of an item sends environmental and resource savings all the way back up the production chain while preventing solid waste. It also can reduce warehousing costs dramatically.

Food service: Plastic trays, ceramic or durable plastic dishware, and metal silverware eliminate the mound of solid waste created each day by using disposable plastic and paper alternatives. Buy food service trays with separated food sections and eliminate the dishes altogether.

Mugs and drinking cups: Give ceramic mugs to staff or encourage them to bring their own. Do not buy disposable cups. Encourage food services and restaurants highly frequented by staff to give beverage discounts to people using their own cups and mugs rather than using disposables.

Linens: Replace disposable table covers, aprons and other similar products with washable linens, possibly through a linen service contract.

Clean-up rags: The Oro Lomo Sanitary District reduced waste and saved money by switching from disposable to washable industrial wipers. Even though the disposable product had recycled content and was made locally, the waste and cost savings took precedence.

Plastic benches and tables last longer and are easier to repair and maintain than wood because they do not need painting.

Plastic lumber parking stops have a longer lifetime than concrete parking stops.

Rubber playground surfaces eliminate the need to continually clean and replace sand and other loosefill materials. See Chapter 15: Recycled Produce Examples — Playground Surfaces.

Metal electrical pole attachments: The City of Alameda Bureau of Electricity uses metal attachments to hold wires on its electrical poles and finds them far more durable than wooden crossbeams.

Warranties: Look for long warranties, particularly on products such as vehicles, equipment and dispensers. Besides indicating durability, long warranties tend to accompany products that can be repaired.

Reduce Product Weight: Lighter weight products, which use less material than their previous counterparts, can often do the job as well as the heavier standards you have been using.

Trash can liners: Thickness does not necessarily mean strength. Order trash can liners by service category, not mil thickness. Trash can liners should be thin enough to reduce unneeded material but strong enough so maintenance workers do not have to double-line cans to provide protection. See Chapter 15: Recycled Product Examples — Trash Can Liners.

Printing paper: Use lighter weight paper for letterhead, brochures, annual reports, billing and other printing needs. Besides source reducing material, it also costs less than heavier paper. It will cut down on postage costs, too, for items to be mailed. Check for high opacity (show-through) in lighter weight paper so that double-sided printing is not jeopardized. Also check to make sure that the lighter weight paper will work in your production equipment. Copy paper less than 20 lb. may be too thin for your copier.

Multi-form paper: Reduce the paper basis weight for multi-part forms and eliminate any unnecessary copies. Print instructions and other necessary information on the back of multi-part forms to eliminate pages. Alameda County, Hayward and other cities print standard terms and conditions on the back of purchase orders.

Reduce Product Size: When you can do so efficiently, use less product to do the same job.

Trash can liners: Evaluate your specifications to order the size liner that matches your trash cans. The extra space of larger bags is wasted because capacity is limited by the size of the trash can.

Reduce margins: Telephone companies nationwide have saved tons of paper and produced thinner books by using more of the page to print their information. Your publications, too, may work just as well with smaller margins.

Half-size paper: Often half a sheet of paper is all that is needed, but only whole sheets are available. Make sure that staff has paper sizes that encourage them to reduce waste.

Brochures and printed publications: Brochures and documents may work just as well with a smaller, simpler design or more information on a page. Talk with your printer and designer about how best to cut paper waste. Most printing is done in multiples on large “parent-size” sheets that are then cut into separate pieces, often with considerable trim left over. Some size sheets will produce less waste than others, depending on the design and size of your publication.

Specific numbers of pages can be printed per sheet. Find out how many pages can fit on the size sheet your printer will use and fit your publication into multiples of that number to eliminate large amounts of leftover paper. You or your designer can design brochures that take best advantage of the printing sheet’s space, thereby eliminating waste in the printing process.

Forms: Eliminate carbon sheets in copies by using no carbon required (NCR) paper for forms.

Double-side billings: Banks and phone companies have dramatically reduced the length of their bills by printing on both sides of the sheet. Adopt double-sided printing for agencies that send out bills to the public, use long applications, issue licenses, and other paper-intensive activities.

Reduce Toxicity: Many governments have already focused on reducing hazardous waste through programs outside of recycling. Many products now available can even further reduce toxicity.

Printing inks: Vegetable-based inks, including soy, linseed, cottonseed, canola and many others, are more environmentally sound than petroleum-based inks. Be sure the ink is not being marketed as a vegetable-based ink when it still includes a considerable amount of petroleum.

Ink colors are made by adding pigments, many of which use heavy metals such as cadmium, arsenic, mercury, lead and others. Avoid inks with heavy metals, including fluorescent and metallic inks and some color shades.

Reuse waste ink. Print shops should collect excess ink in catch pans and restore it to its respective color dispenser. When colored ink becomes too contaminated, it can be added to the black ink.

Avoid graphic designs that waste ink, such as ink washes that totally cover a paper. Choose appropriately colored recycled papers instead. Design for the paper available rather than insisting a paper meet a preconceived idea.

Unbleached paper: Many bleaching processes introduce pollutants into the environment. Unbleached papers and those bleached without chlorine avoid the problem.

Carpets: Tack carpets instead of affixing them with adhesives which give off volatile organic compounds (VOCs).

Paint: Convert from lead, solvent-based paint to lead-free, waterborne paints for interior and exterior applications.

Solvents: Reuse solvents and paint thinners. The City of San Francisco bought a still to recycle paint thinner to reduce waste.

Cleaning compounds: Use soap and water with a high pressure washer rather than chemical degreasers in maintenance garages.

Select Equipment for Source Reduction Features: It will be easier for government employees to reduce waste if the equipment is designed to help them do so efficiently.

Copiers: Buy copiers that can handle duplexing easily. Copiers should be able to read two-sided documents as well as produce them. Have copier defaults set to double-sided printing.

Laser printers: Reprogram your computer software printer defaults to print on both sides of the paper so that documents automatically print double-sided unless the user specifies otherwise.

Paper towel dispensers: Choose dispensers compatible with roll towels rather than folded towels and set dispensers for shorter sheet length. See Chapter 15: Recycled Product Examples — Paper Towels.

Tissue dispensers: Choose dispensers for bathroom tissue that accommodate jumbo tissue rolls instead of small rolls. This reduces theft and maintenance as well as many unused stub rolls.

Pencil sharpeners: Buy hand-crank sharpeners instead of electric varieties to eliminate motors and energy use.

Buy in Bulk: Bulk containers significantly reduce packaging and are more cost-effective as well. Many liquids, ranging from milk, soda and condiments to lubricating oil, can be dispensed from bulk containers into smaller reusable containers which are then refilled when needed. Alameda County requires re-refined oil delivery in bulk.

Products in powdered form are usually available in bulk containers also, and sometimes in concentrated form as well. Liquids sometimes are delivered as powders that then are mixed with water.

Calculate Quantities Needed: Careful planning can eliminate excess, which reduces storage requirements as well as waste. The lower price you might get for buying in large quantities is only lower on paper if you cannot use all the product in a timely manner. Encourage others to use realistic quantities as well. For example, avoid “all you can eat” food service programs in your cafeterias to reduce food waste. Encourage returns for seconds rather than too much at one time.

Reuse — Keep A Good Thing Going

Buy Reusable Products: Buy products that can be reused and then be sure to follow through and actually reuse them.

Inter-office envelopes: Address lines on both sides dramatically reduce the number of envelopes you need to buy. See Chapter 15: Recycled Product Examples — Inter-Office Envelopes.

Two-way envelopes: If you are sending out communications which require the recipient to send something back to you, such as payment for electric bills, use two-way envelopes. There are several designs, some of

which also include a billing sheet or message space built into the inside. Two-way envelopes eliminate the need for separate stocks of #10 and #9 reply envelopes and sometimes inserts as well. They also reduce the number of stations needed on your inserting equipment.

Binders: Buy binders with refillable label pockets or buy blank binders and attach refillable label pockets or peel-off labels. This will allow them to be used repeatedly, unlike binders with labeling systems that function only once. See Chapter 15: Recycled Product Examples — Binders.

Linens: Consider cloth rolled hand towel dispenser systems in restrooms. They eliminate litter and cloth towels can be washed and reused more than 100 times before being made into rags.

Other examples: Reusable air filters, refillable pens and pencils, erasable wall calendars, refillable ink jet print cartridges.

Buy Products That Can Be Repaired: Buy durable products that can be easily repaired rather than replaced when parts wear out. Then — be sure you actually do repairs when needed.

Computers: Upgrade with new chips and cards as long as possible instead of buying entire new computers.

Other examples: Tools, equipment, appliances.

Buy Remanufactured Products

When products are remanufactured, they are comprehensively evaluated, worn parts are replaced, surfaces are refinished and supplies are recharged as appropriate.

Laser toner cartridges: “Recycled” cartridges are really remanufactured. Reputable cartridge recycling companies replace internal parts that are worn or at the end of their useful life, in addition to replacing toner.

Some “recycled cartridge” programs ask you to send your old cartridges back but replace them with new, not remanufactured, cartridges. These programs may make users feel good, but they are not part of source reduction. Often they are dismantling the cartridges and recycling the materials through new production processes, which unnecessarily use far more energy and produce more pollutants than a simple remanufacturing process. Or they may be sending the old cartridges overseas. You will know if you are actually getting remanufactured cartridges because they offer tremendous cost savings, often as much as 40%, yet can produce quality equal to original equipment manufacturers.

Tires: Use retreaded tires. Tests by airlines, bus lines, taxi companies, the U.S. Postal Service and safety personnel prove their quality and safety.

Automotive parts: Many replacement parts are remanufactured already but they are not identified as such. When there's a choice, specify remanufactured parts.

Refurbished furniture: Many office furniture companies sell refurbished components at a discount. They can be painted or upholstered to match or blend with existing components. Some companies have trade-in allowances for excess components.

Some local governments have local refinishers and upholsterers upgrade their existing furniture stock at a fraction of the cost it takes to buy new replacements. Morale is high when office furnishings are pleasant instead of mis-matched leftovers.

Used equipment: Some vendors specialize in selling good quality used equipment such as computers and phone systems. Choosing such products that are in good condition can meet your needs, reduce waste, and save a lot of money as well.

Other examples: Re-inked printer ribbons, reformatted computer disks, reformatted video tapes.

PRACTICES THAT REDUCE THE NEED FOR PRODUCTS

In many cases, buying for source reduction means more about how you *use* a product than product characteristics. In such cases, it is important to ensure that any equipment used in conjunction with the product does not inhibit its source reduction potential. Source reduction practices generally save money as well as reduce waste. Most stem from an attitude that products are valuable. If you can educate personnel to treat products as though they cannot be replaced easily, the items you buy will last longer.

In an effort to buy less in the long run, purchasers may need to collaborate with government executives, recycling coordinators and internal customers. Changing practices needs broad-based support.

Eliminate Need for Specific Products

The very best way to reduce environmental and budget costs through purchasing is not to need a product at all.

Change Habits: Some simple habit revisions can reduce product volume.

Use computers to reduce paper use: Use e-mail, proof and edit documents on-screen, transfer documents on disk or through e-mail to editors and reviewers for revisions, send and receive faxes on-line, save documents on disk.

Share: Post messages on bulletin boards; use routing slips to route documents to several people rather than distributing individual copies; share infrequently-used products; maintain central filing systems and libraries to discourage duplicate files and publications.

Save Time and Paper: When several people edit a printed document, pass along the same copy but use different color inks. Succeeding editors do not waste time on the same thing and revisions are faster if they are all on the same page.

Do without when it makes sense: Eliminate fax cover sheets or use small peel-off fax labels, program your fax to eliminate confirmation sheets.

Reuse Products

Many products, particularly if you ensured their durability when you first bought them, can be reused many times. It is usually best if a product can be reused at its original, highest level. Envelopes, for example, save more resources when they are reused repeatedly as envelopes, than when shredded for packing which probably ends the paper's useful life. Sometimes, however, a product cannot be returned to the same use although it still has a useful form such as metal drums.

Use Labels to Extend Product Life:

Binders: Either peel-off labels or refillable label holders can return a durable binder to the shelf over and over, with no loss of quality.

File Boxes: File storage boxes can be relabeled and returned to use.

Inter-Office Envelopes: Put labels on an interoffice envelope when all the address lines are full and send it out again. Alameda County keeps inter-office envelopes and file storage boxes going by relabeling over and over until the item is no longer serviceable.

Get the Most Use from Expensive Supplies: Educate staff to return excess or reusable supplies to a central supply cabinet for use by others.

Filing Products: The City of Palo Alto calculated that it costs more than \$300 to outfit a 4-drawer letter-size file cabinet, with approximately 100 files per drawer, every fiscal year. It costs \$370 to outfit a legal-size cabinet. File folders, hanging folders, and plastic tabs can all be relabeled and reused with resulting savings.

Use Salvage Operations

Most governments have salvage operations which take furniture, vehicles, equipment, appliances and supplies no longer wanted by one department but useful to another. Find out how to work efficiently with your salvage program. Shop the warehouse first before ordering new items and remember to send you own usable discards to salvage.

Government salvage operations are profit centers. The City of Tucson sells everything from bicycles to fire hosing and generates hundreds of thousands of dollars annually.

The City of Tucson takes reuse seriously. The Water Department has a unique unit that refurbishes metal water delivery components. Not only does this practice save money for expensive replacement parts, the department has a much wider range of parts in inventory for emergency response. The Facilities and Design Management Division recovers doors, windows, bathroom fixtures and hardware for reuse when spaces are renovated.

Sell What You Can

If auctions for employees and the public are impractical, there are non-governmental resource centers within Alameda County, such as Urban Ore, which may buy discards as well as sell appropriate products. See Appendix III: Resources for contacts.

Steel Drums Reconditioners: Drums received as packaging have a well established market. Reconditioners clean drums for resale. Those that are not used for packaging again become cost-effective trash and recycling cans in parks.

Donate What You Cannot Sell

You can donate used office furniture, equipment, and appliances to local resource centers like Non Profit Services. The East Bay Depot for Creative Reuse takes other types of unwanted materials — including outdated letterhead and envelopes, paper printed on one side, cardboard tubes and cores, and many other unusual materials — that can be used for school or community art projects. See Appendix III: Resources for contacts.

Consolidate and Use Products Completely

Make Double-Sided Copies: Your copying machine's technical capabilities are crucial to easing the transition to double-sided. If it easily duplexes from either single- or double-sided copies, users will be more cooperative. Sometimes a copy machine can duplex but may not handle a double-sided original well. Or the document may need to be frequently faxed through a paper fax. In that case, staff may want to keep a single-sided copy of the document for these uses, while all copies distributed are double-sided.

Use Paper Wisely: Consolidate communications instead of sending several short directives, single-space documents, reduce page margins, set up computer database reports to use paper efficiently, review documents (such as bid documents) and attachments to ensure that each page is needed.

Use Scrap Paper: Use scrap paper for memo pads and telephone messages, use the blank side of paper printed on one side for written drafts. Designate a tray in a multi-tray copier for "draft paper," or keep a tray loaded with it at the printer and the copier for people to use for internal documents and drafts. Better yet, use this paper as the "standard" in your printer and copier and require people to switch to a tray of "new" paper when they need clean copies.

Consolidate Checks: Often many checks may be authorized to the same vendor each month for different deliveries. Coordinate with your vendors to consolidate bills so that they can be paid with fewer, or even one, monthly check.

Other Examples:

Trash can liners: Use until dirty rather than disposing every time trash cans are emptied.

Oil and lubricants: Combine small amounts rather than disposing; use a dispenser with a spigot if an opened product needs to be protected.

Labels: Save blank labels from pre-printed sets for other uses. Better yet, print directly on to envelopes instead of using labels at all. Provide large labels for staff to use in covering over the addresses on used envelopes so that they can be sent out again.

Update Mailing Lists

Eliminate Outdated Names From Junk Mail Lists: Send pre-printed postcards asking senders of unsolicited junk mail to remove the name on attached labels from their list. Use their pre-paid mailer if available.

Barbara Frierson, the Waste Management Specialist in the City of Alameda, developed an ambitious project to eliminate office junk mail. While householders can contact the Direct Mail Association (DMA) to remove names from mailing lists, there is no comparable service for office mail. Vendors which mail to households and abide by DMA removal requests are usually different from vendors who mail to offices.

For one month a year, the City of Alameda tracks unsolicited junk mail addressed to city employees, former city employees and retirees. After identifying the vendors responsible for the majority of unsolicited mail, Ms. Frierson sends them letters with copies of the mailing labels for names to be removed from all subsequent mailing lists. She observed a 40% reduction in offending vendors after the first year's project, although the number of unsolicited pieces did not go down. Others had increased volume.

The second year, Ms. Frierson identified the key offenders, contacted them again and sought outside help to bring them into line.

Ask Employees to Refrain from Having Personal Catalogs Delivered at Work: This will help you implement the next strategy.

Instruct the Mail Room to Refuse to Deliver Certain Types of Junk Mail: The proliferation of unsolicited personal goods catalogs requires sorting and delivery time. Inform senders of personal catalogs that their material will not be delivered.

Review Distribution Lists Frequently: Check both document and fax lists to eliminate outdated or unnecessary destinations. Contact destinations with many recipients and ask whether they will route the copies so that you can reduce how many you send. The California Integrated Waste Management Board purged its external mailing lists by sending letters and postcards to recipients asking them to indicate what they wanted to receive. Recipients who did not return the questionnaires were removed from the mailing lists.

Think “Minimum Impact” When Ordering Equipment Or Designing Processes

Sometimes a source reduction practice requires a change in hardware or process. Then you can buy a different type of product which minimizes environmental impacts.

Examples:

Rechargeable batteries: You will need to buy rechargers and different types of batteries, but then can realize important savings.

Fluorescent lights: If you have been using incandescent lights, you will need to change your light fixtures to accommodate fluorescent tubes and bulbs. Governments that use reflectors with their fluorescent lights find that they can cut in half the number of lighting tubes needed. If some fluorescent lights were installed long ago, recycle out-dated ballasts while you install new fixtures.

Sodium lights: Sodium lights in offices and street lamps are more efficient and less hazardous than fluorescent (as well as incandescent and mercury vapor). Their greater illumination also reduces the amount of other lights needed in a mixed lighting situation.

Duplexing: You will need copiers that can easily duplex, both from two-sided originals and as output copies.

Plain paper faxes: Purchase plain paper faxes in order to eliminate the need to copy thermal sheets for longevity or ease of use.

Reusable bank deposit bags: Your bank should provide these. Develop an ongoing, closed loop system by picking up empties when you make deposits.

Inter-office envelopes for vendors: Alameda County departments must authorize office supply invoices before payment by the Purchasing Department. The buyer provides inter-office envelopes to its vendor so invoices can be dropped off and routed directly into the county's mail distribution system with a minimum of waste. No invoices are lost in the mail, the system save postage costs and envelopes are used over and over again.

Tools and equipment: Be sure that battery-run equipment can use replaceable, rechargeable batteries. Avoid products designed for disposal when the non-replaceable rechargeable battery no longer holds a charge. When you have a large quantity of specific tools or equipment, choose the same high quality make and model for all so that you can interchange parts and repair them more easily.

Dispense from bulk containers: Condiments, soaps, cleaning supplies, shop supplies and many other items can be dispensed in bulk instead of small individual packages. Apply the concept of refillable soap containers to other products as well.

Landscape with permanent plantings instead of annuals.

Calculate “ownership cost” for equipment and products, including acquisition, extended warranties, operation, supplies, maintenance, expected lifetime compared to other alternatives, and disposal costs. Frequently this will show that a product that may have lower initial costs will actually be more expensive and use more resources over time than a more durable alternative.

Focus On Maintenance and Repair

Products will acquire minor damage over time. Rather than replacing them, repair products to keep them functioning as long as possible.

Examples:

File boxes: Usable handles and tops can be used to repair damaged file storage boxes.

Equipment and machinery: Regular lubricating schedules for machinery extend life and reduce repairs and replacement.

Tires: Use a regular tire maintenance program to extend tire life.

REDUCE PACKAGING

Purchasers can have an impact on reducing packaging even when the products inside may not qualify as source reduced. All purchasers should ask vendors to ship their products with the minimal amount of packaging necessary. Major purchasers in particular can influence packagers to reduce waste. You may also be able to arrange to return packaging to vendors. See Appendix III: Resources for sources that discuss using purchasing power to reduce packaging waste.

Use a Reduction Clause in Bids and Contracts

Alameda County, the City of Alameda, Berkeley, Fremont and Oakland insert a source reduction clause about packaging in their contracts. See Chapter 8: Bids and Contracts — Packaging Clauses for specifics.

Other Steps

Internal Deliveries: Use reusable and returnable containers (such as durable boxes and canvas bags) for deliveries from the mail room, print shop and other distribution points. Develop a system to ensure they get returned to the original department for reuse. Reuse boxes from outside deliveries for internal distribution.

External Deliveries: Develop a closed-loop delivery system with frequently-used vendors. Have them drop off your supplies in durable, returnable containers and pick up those waiting from previous deliveries. This saves vendors money and may improve your future contract costs.

Blanket-Wrap Furniture, Appliances and Equipment: Request that the vendor deliver large items in blanket-wraps that they then take away for reuse. This eliminates piles of corrugated, polystyrene foam and plastic wrap after you unpack the product.

Pallets: Reuse pallets, return them to vendors or contract with a company that collects, refurbishes and sells pallets to distributors in your area.

BUY FOR RECYCLABILITY

Ensuring recyclability may be a solid waste reduction process for your jurisdiction. It also reduces problems at the source the second time around when materials are recycled through the production process. Whenever possible, look for products that are compatible with your jurisdiction's solid waste management systems. Non-recyclable products may contaminate collection systems or increase disposal costs. Sometimes a product can be changed slightly to make it recyclable, such as when foil embossing is removed from letterhead or a brochure.

Examples:

Colored paper: Eliminate neon and goldenrod colors. They are difficult for paper mills to deink.

Groundwood paper: Some office papers, especially some computer and copy papers, contain "groundwood" fiber similar to newsprint. They often

cost less and may have high recycled content but they contaminate most office paper systems. Newsprint recycling systems may not be able to take them because of laser and copier print. If you use groundwood paper, make sure you can recycle it first.

INFLUENCE OTHERS

Sometimes waste seems out of your control. It may come to you unsolicited, or for reasons that seem unassailable. But you may have more power to reduce waste from outside sources than you think. Enlist the cooperation of outside sources to help you achieve your source reduction goals.

Educate

Make sure that staff, vendors and contractors understand your jurisdiction's commitment to reducing waste. Ask them all to participate. Send them information on source reduction tips, or explain why a process has been changed or a directive issued — and use e-mail or central bulletin boards.

Construction

Encourage architects and construction contractors to use modular sizes to reduce material waste.

Contractors

Be sure that contractors, including copier and printing contractors, implement source reduction policies for any work that impacts your jurisdiction. Ensure that rented or leased equipment is compatible with your source reduction goals.

Vendors

Suggest that vendors highlight source reduction characteristics for products advertised in their catalogues. Encourage them to group source reduction materials with companion products. For example, office catalogues could highlight reusable or refillable labels on the same pages as binders, with a note that the labels simplify reusability. Ask vendors to use the minimal amount of packaging necessary to ship your products to you safely.

Let Others Reuse What You Cannot

Send excess furniture and equipment to your salvage operation. Allow employees to buy used furniture and equipment, or sell or donate it. Donate paper (such as outdated stationery) with at least one blank side and other materials to a resource center, schools or children's art centers. Check the

California Integrated Waste Management Board's CALMAX list for others who may be looking for exactly what you want to toss. See Appendix III: Resources for contact information.

ASK FOR SUGGESTIONS

Ask staff, vendors and contractors for their ideas for source reduction products and practices. In many cases, they are more knowledgeable than you about specific needs and processes now in use in your jurisdiction. They will have creative ideas to contribute.

GET SPECIFICS

Require that vendors claiming source reduction advantages for their products fill out a certification form to that effect. See Chapter 8: Bids and Contracts for a sample certification form. Reductions should be compared to the last previous version of the product or to competitive product alternatives.

Vendors may claim a reduction in toxic constituents. This is compatible with the source reduction definition but must be verifiable. Purchasers can most easily verify toxic reductions when they involve issues such as non- or less hazardous constituents in the products used or emissions in use. Vendors may claim toxic reductions in the manufacturing process. Purchasers may find those claims difficult to compare and verify.

KEEP DEVELOPING NEW SOURCE REDUCTION IDEAS

Source reduction is never "done." Even the most sophisticated program can continually improve. Governments, businesses and organizations are continually coming up with more creative ideas to reduce waste at the source. Many of them will improve *your* program too.

CHAPTER 14 RECYCLED PRODUCT OPPORTUNITIES

There are more recycled products on the market every day. If you are just getting started, or if your program has been running for a number of years, this chapter can help you. It describes the issues to keep in mind and uses the recycled product discussions in the following chapter as examples.

DO THE EASY THINGS FIRST

When you begin a program or add new recycled products, start with items that users can accept the most easily.

Publicize Products That Have Recycled Content Already

Examples: tissue products, trash can liners, insulation, playground surfaces

Users are more receptive to recycled products if they are familiar with examples but do not know it. Ten years ago, few people in government or commercial establishments knew they were using recycled paper towels and other tissue products. The buyers did not know either. It was easy to get them to accept the recycled content because they already liked the product. In California today, all plastic trash can liners must have recycled content by law but many purchasers still order “virgin” bags.

Nearly all rubber playground surfaces have recycled content. Few users know it. All insulation products today are available with recycled content. All but plastic foam insulation products have recycled content as a matter of course. This may surprise most construction personnel.

You can start with existing recycled products to design your purchasing and reporting programs without fear of user resistance. Then you can expand your program with some solid successes in place. Chapter 8: Bid and Contracting Procedures describes program elements.

Expand with Large Volume Products That Are Easy to Find

Examples: copy paper, envelopes, re-refined oil

Demand for recycled products is well established for some product lines. All directories provide sources and local vendors stock them. It is easiest to expand your program with products like these because buyers do not have to struggle to find them.

Try Products That Have Been Proven In Use Elsewhere

Examples: copy paper, re-refined oil, re-treads, rubber playground surfaces

Buy-recycled programs have been in place for some time. Many recycled products have been tested in use by government agencies like King County and Snohomish County in Washington and the U.S. Postal Service. Ask your vendors for information about their satisfied customers and build on the experience of others.

Expand with Products That Have Similar Attributes

Examples: printing papers, plastic film like trash bags, rubber components

Recycled content standards and performance characteristics are similar for a range of products. Offset paper, computer print-out paper and copy paper have much in common. Once you have one recycled product in use, look at all the related items. You should be able to apply the same criteria. Each product example in the following chapter identifies similar products.

Exempt Metal Products from Special Efforts

Governments buy a vast array of metal products. Your buy-recycled program will be swamped if you have to track recycled content in all of them. The effort would be wasted though because research studies for EPA, state and local governments have proven that nearly every metal item has the highest practicable amount of postconsumer content. You can accept this on faith and put your effort where it will have an impact.

Exempt Product Categories That Cannot Have Recycled Content

Many government purchasing departments assume that they must apply buy-recycled efforts to everything they buy. Recycled content is improbable in food, pharmaceuticals, plants, seeds and surgical supplies. Recycled content does not count in fuels because energy recovery is not recycling. Save yourself headaches and cull the impossible from your purchasing list.

Avoid Complex Products

Although there is recycled content in many components, it is difficult to track in complex products like vehicles and electronic equipment. Many separate companies supply components to the “manufacturer.” It is better to seek durability and recyclability in products like these. This rule of thumb does not hold true for items with a few parts, however. Use careful judgment when eliminating complex goods.

BUILD YOUR LOCAL ECONOMY

When you have some experience with your buy-recycled program and know something about the recycled product marketplace, you can focus purchasing efforts with your local needs in mind. It is a good idea to expand your program with products that help resolve local problems.

Focus on Recyclable Materials with Poor Markets

Examples: rubber, plastics, re-refined oil

Your recycling coordinator can tell you which materials have poor markets in your local recycling economy. The examples listed here may not be the only problems. Paper, compost and glass may need market stimulation too. Recycled product demand is the most effective market stimulant.

Seek Locally Produced Recycled Products

Local manufacturers are most likely to use recycled materials generated in your area. Purchasing support helps local companies expand; this helps your physical and economic environment. The best example in Alameda County is re-refined lubricating oil. One of the four refiners in the country has facilities in the county.

Create a Manufacturing Opportunity Through Purchasing Demand

Examples: asphalt rubber, plastic lumber

Some products are available only from distant sources even though there is a large potential demand in a local region. If enough purchasers prefer a specific recycled product, manufacturers will recognize the opportunity and site their next plant nearby. Communities can work together to attract new manufacturing capacity if they build their buy-recycled programs together.

Improve Local Vendor Stocking Practices Cooperatively

Example: inter-office envelopes, file storage boxes

Even though all governments use a particular product, they often do not order enough to stimulate their vendors to stock the recycled counterpart as a matter of course. When you know an item is technically available, like recycled inter-office envelopes, but you see unusually high price quotes, find out if volume is the problem. If it is, touch base with other purchasers in your region and coordinate your specifications. Then, everyone should keep trying. Set up a cooperative bid if possible.

Maintain Demand for Key Products to Maintain Advances

Examples: copy paper, trash cans, trash can liners, fiberglass insulation

Just because a recycled product is available you cannot assume your purchasing efforts are no longer needed. Only your demand keeps many items in production.

The major trash can manufacturers dropped recycled products from their lines because buyers did not specify recycled counterparts. Paper distributors do not stock recycled paper in the same quantities as virgin alternatives because they are unsure about demand when prices rise. Some paper mills switched to virgin feedstocks during 1995 when recycled demand fell due to higher prices across the board.

California minimum recycled content legislation is in jeopardy when buyers do not stress their preferences for recycled content trash bags and fiberglass insulation. When you maintain your interest, manufacturers will respond with the recycled content you specify. They want to keep your business.

RECYCLED PRODUCTS IN THE MARKETPLACE TODAY

The best way to survey opportunities comprehensively is to look through recycled product directories. Appendix III: Resources has many general directories as well as material-specific directories. If you compare the items offered with the items you buy, you will find a great many recycled counterparts.

Table 14-I lists a wide range of available recycled products organized in reasonable categories. This list is by no means exhaustive but it should give you some ideas. Check the recycled product directories for every paper, paperboard, plastic, rubber, glass, oil and solvent product you buy. Chances are, you will find a recycled counterpart.

Table 14-I
AVAILABLE RECYCLED PRODUCTS

Automotive Products	
re-refined oil	license plate holders
recycled anti-freeze	mats
retreaded tires	sunshields
remanufactured auto parts	wheel chocks
solvents	mud flaps
Construction Products	
drain pipe	fence posts and fencing
recycled aggregate	decking
insulation	dock bumpers
geotextiles	pilings
shower and toilet partitions	fenders
wall board	paint
recycled asphalt & concrete	roofing
Furnishings	
carpeting (polyester)	bike racks
carpet pads and underlayment	floor mats
outdoor tables and benches	signage
Landscaping and Parks Products	
edging	animal bedding
landscaping timbers	planters
underground "soaker" hose	flower pots
hydroseeding mulch	posts
mulch	playground equipment
soil amendments	playground surfaces
recycling containers	paving systems under turf
litter containers	boardwalks and decking
Maintenance Supplies	
trash cans	rags
wastebaskets	industrial wipers
recycling containers	utility mats
trash can liners	urinal screens
pails, buckets, bins	composters
absorbents	

Table 14-I continued
AVAILABLE RECYCLED PRODUCTS

Office Supplies	
binders	card files
report covers	bound office books
desk accessories	bulletin boards
calendars/appointment books	filing supplies
labels	mugs
remanufactured equipment	pencils and pens
bank deposit bags	toner cartridges
Packaging and Shipping Supplies	
paper bags	edge protectors
plastic bags	peanuts, paper and plastic
padded mailing envelopes	mailing tubes
file storage boxes	cores for rolled goods
corrugated boxes	wrapping paper
boxboard boxes	gift wrap and tissue
bubble wrap	pallets
Paper Products	
all uncoated printing paper	all newsprint
all uncoated writing paper	all tissue products
all envelopes	toilet, towel, napkin, facial,
all text and cover paper	seat liners
coated paper	food service products
bristol and poster board	paper targets
construction paper	target backs
business cards	greeting cards
Promotion Products	
T-shirts	paperweights
mugs	trays
plaques and awards	and many, many more
Transportation Products	
delineator posts	speed bumps
barrels and barricades	car stops
traffic cones	wheel chocks
posts and signage	

CHAPTER 15

RECYCLED PRODUCT EXAMPLES

This chapter contains information about fifteen specific recycled products. It is the kind of information you would gather if you researched each product yourselves.

PRODUCTS

The project team chose these examples because they are similar to many products you buy. Six of the fifteen items were chosen for their source reduction potential. All are available with recycled content. You can apply the source reduction and recycled content information to all the similar products identified in each example. The products are:

SOURCE REDUCTION PRODUCTS

Binders
Inter-Office Envelopes
Paper Towels
Plastic Food Service Trays
Plastic Lumber Benches
Trash Can Liners

RECYCLED PRODUCTS

Copy Paper
Fiberglass Insulation
File Storage Boxes
Flexible Delineator Posts
Playground Surfaces
Re-Refined Lubricating Oil
Soil Amendments - Compost
Trash Cans and Rolling Carts
Unbound Aggregates

The product sections in the balance of this chapter are presented alphabetically. There are too many considerations to organize them any other way.

ORGANIZATION OF INFORMATION

The data in each product section is organized the same way so that you can find the details you want easily. When the information is complicated, or when new specification issues are being introduced nation-wide, you will find key information in all the main sections. The sections are:

Applications

Here you will find the common uses for each product. Similar products appear under a sub-heading. Now and then the information in this section mingles with data in the next section that describes product features.

Attributes

This section has information about what the product is made from, manufacturing details and product characteristics. Specific news about recycled content and source reduction opportunities is introduced. Key data appears under the following sub-headings:

EPA Designation: The U.S. Environmental Protection Agency designated many products for recycled product purchasing when federal funds are used. Details about your obligations for these products are in Chapter 3: Federal and State Requirements. EPA standards often become national policy and you will find recycled products that meet EPA standards most easily.

EPA issued five recycled product procurement guidelines between 1983 and 1989. In May, 1995, EPA combined these guidelines and added nineteen new products in the Comprehensive Procurement Guideline (CPG) and accompanying Recycled Materials Advisory Notice (RMAN). Periodically, EPA revises RMANs and issues new RMANs for additional products.

The dates may appear confusing. EPA proposed a new Paper RMAN in March, 1995, before the general RMAN dated May 1, 1995, was final. The final paper RMAN is due in 1996. Proposed standards may change from those shown in Table 6-II in Chapter 6: Recycled Content Standards. Until the final RMAN is published, the existing paper standards in the May, 1995, RMAN are in effect.

Minimum Recycled Content Standards: This section describes the basis for the recommended recycled content standards. Many derive from EPA and California standards. When variations occur, the reasons are given.

Reduction Opportunities: You will find source reduction suggestions for each product whether it was targeted for source reduction potential or not. Look at these carefully, most are based on logic. You will find similar opportunities for many products that are not described in this chapter.

Construction Specifications Institute (CSI) Division: This information for construction products alone helps you find the section of construction documents to be affected.

Cost: As you know, prices for individual products fluctuate with time and quantity. Hard cost data is out of date before it is published. However, there are general tendencies. This section tells you if recycled products cost more, less or are competitive with virgin counterparts.

Specification Issues

This section will help you evaluate your own specifications. To avoid repeating common obstacles in each product description, these are described in Chapter 8: Bid and Contracting Procedures — Review and Revise Specifications — Typical Obstacles to Recycled Content. Examples of typical obstacles include:

- requirements for virgin content or “all new” components
- requirements that recycled content cannot be used
- light, bright and clear color requirements
- low dirt, speck or flaw counts where it does not matter

Standard Specifications and Test Procedures: These sub-headings provide references and test methods when appropriate.

Adjusting Specifications: Here you find the actions you should take with your own specifications. There is no need to use complicated specifications when simple ones will serve as well. Most recycled products are designed to meet the specifications of their virgin counterparts. In many cases, all you need to do is insert the recycled content standard.

Using Agencies and Usage Issues

These sections have general information about who uses each product and what they care about the most. Since all governments are different and all department staff have their own idiosyncrasies, you may not find all the information you need for your own jurisdiction. It is a good idea to talk about potential changes with the people who actually use the product. There are suggestions in Chapter 9: Meeting Your Internal Customers' Needs.

Sources

You will find clues to sources for the products described in this section. Details about all of the resources mentioned are in Appendix III, Resources.

BINDERS

Governments use binders internally to organize information and externally to distribute educational materials. Generally, government personnel buy binders through their office supply contracts. Most, if not all, office supply companies serving Alameda County jurisdictions offer recycled binders among their wide variety of binder styles. Vendor records reveal that many recycled binders are being purchased.

APPLICATIONS

There are three basic types of binder covers: pressboard (paper), vinyl covered paperboard and solid plastic. Each type of binder cover has a wide variety of closure and binding systems.

Closures or binding mechanisms made with metal all contain recycled material so there is no reason to seek recycled content data for metal parts. A few companies, however, count the recycled metal in their recycled content calculations. As metal is heavy, it can contribute significantly to total recycled weight. Plastic closures and binding mechanisms do not contain recycled content.

Reusability and future recycling are more important than recycled content in closure and binding systems. The contents of binders should be removable for easy reproduction or recycling. Binders themselves should be reusable. The closures get the roughest handling and represent a tiny overall market for recycled feedstocks. There is no technical or marketing advantage to seeking recycled content in closure and binding systems.

Recycled content in binder covers is another matter. All basic types of binder covers are available with recycled content.

Pressboard

Pressboard is a specialty paper generally grouped with bristol grades. It is tough but flexible. Pressboard is used for a wide variety of three-ring and clamp binders, report covers, and binders for computer print-outs.

Pressboard binder covers may be uncoated or acrylic-coated to repulse moisture. EPA identified three producers of pressboard. At least one uses 30% postconsumer content in acrylic-coated pressboard or 50% postconsumer content in uncoated pressboard. Other advertised binders contain 15% postconsumer content and 40% preconsumer material.

Vinyl or Cloth Covered Paperboard

Many three-ring binder covers are made with cloth or vinyl over stiff paperboard. Chipboard and other paperboard grades used in binder covers contain significant percentages of postconsumer fiber. Various thicknesses of this type of paperboard contain identical feedstocks so thickness does not affect the percentage of recycled content.

The vinyl cover can contain recovered material as well. Most recycled polyvinyl chloride (PVC) used in vinyl covers is preconsumer material from industrial trim. Demand for postconsumer PVC is helping hospitals expand their programs to recycle clean items like saline solution bags.

Solid Plastic

Solid plastic binders compete with paperboard products. They are flexible and durable but not as stiff as vinyl covered binders. Solid plastic covers can be made with recycled polyethylene terephthalate (PET) or polyethylene (PE). Although most plastic binders in the marketplace today are made with virgin plastic, equivalent products with postconsumer content can be found.

Similar Products or Uses

Many flexible office and filing products are made with the same types of material as flexible binder covers. Examples include:

- Pressboard: filing folders and other filing products, report covers
- Plastic: plastic files, document holders, presentation envelopes

Except for thickness, the chipboard or paperboard used to stiffen vinyl covered binders is no different than the type of paperboard used for gameboards, pad backings and so forth.

ATTRIBUTES

As all types of binder covers can be purchased with recycled content and Alameda County personnel are selecting recycled alternatives, this section will stress source reduction attributes.

Reusable Binders

Durable binders are reusable. When the contents are not useful anymore, many government staff recycle the paper and hold onto the binders to use again. They paste new labels over the old. It is possible to reinforce this practice by seeking binders designed to be used more than once.

Spine Pockets: Many binder designs have pockets on the spine to insert labels. These allow users to identify contents when the binders are on shelves or in filing cabinets. Updating the label is simple with this feature.

Clear Stick-On Pockets: There are binder accessories, like pockets, that can be glued to binder covers. The self-adhesive pockets are often non-glare and allow the labels to be changed as needed.

Removable Labels: Some office supply companies introduced removable labels in many configurations. You can stick on and pull off these labels as easily as you use post-it notes. Some removable labels are designed for laser printers so you can customize text any way you want.

View Binders: Many binders are designed with clear overlays so users can insert customized, full-page, front and spine labels. Often the solution to custom-printed binders for special events or company identification, this labeling solution offers reuse opportunities.

However, the clear plastic used with most view binders today lifts the print off laser-printed and xeroxed pages. New identification is illegible through the old print. Alert binder manufacturers are aware of this problem and are seeking solutions. View binders rarely have recycled content in the vinyl cover because, according to manufacturers, contaminants interfere with attaching the clear view-cover material.

Recycled Content and Reusability: It is not easy to find binders designed for reusability with recycled content. Manufacturers still view these as either/or options. On the other hand, binders with recycled content were unknown a few years ago. Buyer demand created the market. Manufacturers will respond to source reduction preferences when customer demand strengthens.

EPA Designation

EPA designated plastic covered binders with 25% to 50% recovered material in May, 1995. EPA found that strength, tear resistance and cold crack resistance performance requirements can be met with 25% recovered materials. EPA did not include solid plastic binders in the May, 1995, Recycled Material Advisory Notice (RMAN).

At the same time, EPA designated chipboard, paperboard or pressboard binders or binder components with the same 80% postconsumer content as paperboard in its existing 1988 paper guideline. EPA introduced a separate category for pressboard in the proposed March, 1995, paper RMAN. The proposed recycled content level for pressboard is 50% recovered material with 20% postconsumer content. The proposed paperboard standard for binder covers is 90% to 100% recovered material with 75% to 100% postconsumer content. These proposals may change when the final RMAN is published.

Minimum Recycled Content Standards

The recommended minimum standards follow EPA to a certain extent, but take into account proposed EPA changes, products in the market today and the focus on postconsumer content. An additional standard covers solid plastic binder covers.

Recommended Recycled Content = Variable

Pressboard = 20% postconsumer material
Paperboard Used in Covered Binders = 75% postconsumer material
Solid Plastic Binder Covers = 25% postconsumer material
Plastic Covering for Covered Paperboard = 25% recovered material

Reduction Opportunities

Recycling staff can educate department personnel about saving binders for reuse. The City of Fremont circulated a waste prevention tip from Palo Alto in one of its newsletters. Palo Alto analyzed the annual cost to organize a 4-drawer file cabinet with 100 files. File folders and labels alone cost over \$350. A similar cost analysis of binders would help people get the message. Alameda County sends flyers and samples of new recycled and source reduction products to department personnel. These are excellent ways to alert your own agencies to source reduction opportunities they can order themselves.

Buyers can help government staff practice source reduction by making the right supplies available. People will save and reuse their binders more frequently if they can re-label them easily.

You can ask your office supply companies to include stick-on label pockets and removable labels in the special catalogues they produce for your jurisdiction. The suppliers can identify these as source reduction items.

Cost

Some recycled binders cost more than their virgin counterparts, others are less expensive. There are so many varieties that no rule holds fast.

Binders intended for reuse may cost more than throw-away alternatives. You may want to do an ownership cost analysis to justify higher prices.

SPECIFICATION ISSUES

Color is always an issue with recycled content. Pale colors, like white and yellow, do not cover the “ecospots” as well as darker pigments. If you want high postconsumer content, select darker colors at the outset.

Plastic that picks up laser and xerographic print can stop your reusability program before it gets started. If you order view binders or stick-on pockets, specify materials that leave the print on the paper.

Removable labels and stick-on pockets must have compatible adhesives for the types of plastic used to make the binder covers you order. Ask vendors to identify any problems and specify binder materials accordingly.

Standard Specifications

There are no standard specifications for reusable binders or those with recycled content. Most people rely on descriptions in their office supply catalogues.

Test Procedures

Manufacturers do test their products to maintain quality control. However, you do not need complex test results for binders. When you consider switching from one type of binder to another, ask your suppliers about the issues identified here. Many office supply houses test products in use by their own employees before stocking them for their customers.

You can order some samples for use in your own department. If the samples work well, you can be comfortable offering them to everyone.

Adjusting Specifications

Introduce the recycled content standards in specifications for all the binders you buy. Specify colors that can contain recycled content most easily. With vinyl-covered view binders and stick-on pockets, specify a plastic cover material that does not pick up laser and xerographic print. You will not need to state the type of plastic, just the performance requirement.

USING AGENCIES

All government agencies use binders at one time or another. Some order them in large quantities, others order them by ones and twos throughout the year.

USAGE ISSUES FOR REUSABLE BINDERS

Users want binders that are the right size for the contents and they want a variety of colors so that they can color-code their information. Everyone wants durable closures and binding systems.

The people who use a few binders at a time would like to have them handy as they are needed. A stock of used binders returned to supply shelves will satisfy this type of user if new labeling supplies are handy too.

Quality counts with binders intended to last a long time. Nothing is more annoying than three-ring binders with gaps in one or two of the rings that let the contents jump out of the rings. Covers that crack at the joints annoy people too. Poor quality binders are thrown away.

SOURCES FOR RECYCLED AND REUSABLE BINDERS

All recycled product catalogues list binders with recycled content. Standard office supply catalogues have reusable binders with spine labels and some list binder accessories to improve reusability.

No catalogues to date identify reusable binders with recycled content or reusable binder accessories. This is an innovation opportunity for Alameda County jurisdictions.

COPY PAPER

Copy paper may be called reprographic paper, copier paper, dual-purpose or xerographic paper. Governments use it in large quantities and is the largest category in the uncoated commodity printing paper grade according to production data. At least eight Alameda County jurisdictions currently use recycled copy paper, including the County, the City of Alameda, Berkeley, Fremont, Hayward, Livermore, Newark and San Leandro.

As more forms are generated by computer software and laser printers, cut-size copy paper replaces continuous forms bond. Some companies with an eye to the future recently eliminated or reduced forms bond production.

APPLICATIONS

Many governments use copy paper for all their laser printing, fax and offset duplicator needs as well as for xerographic copying. Some jurisdictions, like Alameda County, use copy paper for all letterhead and fax cover sheets.

Similar Products or Uses

The paper industry divides uncoated printing paper into commodity and non-commodity grades based on the type and size of mills that make them. As the name implies, large, high-speed commodity paper mills produce in vast quantities. Smaller, specialized mills produce the non-commodity papers because they can shift from one grade to another more efficiently. Non-commodity mills often serve small-volume niche markets. The 1993 federal Executive Order established different 1995 recycled content standards for the following non-coated paper grades. The terms in parentheses reflect EPA research for clearer terms.

Commodity - 20% Postconsumer	Non-Commodity 50% Recovered/20% Postconsumer
copy paper (reprographic)	writing and office paper
offset paper (uncoated offset)	book paper (text and cover)
forms bond	cotton fiber paper
computer print-out (forms bond)	cover stock (text and cover)
carbonless paper	
file folders	
white wove envelopes (tablet)	
(kraft envelope)	

EPA recommends avoiding general paper terms like: “bond”, “book” and “offset” when setting recycled standards because the terms do not describe the paper adequately. Paper mill representatives confirm this. According to EPA, ledger paper, offset paper, book paper, bond paper, stationery and writing paper could have different recycled content requirements. Buyers who use specific terms in their specifications can avoid confusion.

ATTRIBUTES

Copy paper is one of the first recycled products governments seek. It helps to understand the product characteristics and market conditions. The general attributes in this section apply to virgin and recycled alternatives.

Grade

At one time, governments ordered Grade 1 bond for their copying needs. It was the most expensive grade except for paper with cotton fiber content. Grades are determined by brightness levels. Brightness measures how light is reflected from the paper. Brighter paper looks whiter whether it is or not. Fluorescent agents or other additives fool the eye. Minimum brightness levels are:

- Grade 1 85
- Grade 4 79
- Grade 5 74
- Grade N 55

Brightness is being dropped from specifications because it is an aesthetic, not a functional, characteristic. Since all grades have the same functional performance characteristics, nearly all governments now select Grade 4. Some order “natural” or Grade N.

Size

Copy paper is sold in cut sizes rather than in rolls. At one time there were many specialty grades like mimeo, duplicator, xerographic and laser papers because the paper had to work with very different reproduction equipment. Today, as impact, laser and xerographic copying replaces older methods, buyers order a single type, or dual-purpose, paper. The standard sizes are:

- 8 1/2” x 11”
- 8 1/2” x 14”
- 11” x 17”

Weight and Thickness

Basis Weight: Users specify copy paper by basis weight expressed in pounds (# or lb.) or in sub weights which mean the same thing. Standard copy paper weights are 16 lb., 20 lb. and 24 lb., with 20 lb. the most frequently used by governments. Usually, the heavier the weight, the thicker and more expensive the paper.

Thickness or Caliper: Paper thickness is measured in ten thousandths of inches or thousands of millimeters with an instrument called a caliper. In the paper industry, caliper and thickness are synonymous. Caliper matters because copy and printing equipment is set delicately to handle paper of a certain thickness. The machines may jam if the settings are not changed when necessary.

Paper Constituents

Additives and Fillers: There is more to paper than cellulose fiber. Both virgin and recycled commodity grade papers have 10% to over 40% additives and fillers such as: chemicals, calcium carbonate, clay, dyes, titanium dioxide and other whitening agents. All paper has some moisture content.

Fillers, like clay, improve opacity, brightness, smoothness and finish. Calcium carbonate reduces the acidity, or pH, in paper and thus improves paper lifetime. Alkaline papers, with low pH, are preferred for archival uses. Too much filler, however, can reduce paper strength and bulk and may dust easily in printing and converting equipment.

Additives and dyes improve color or brightness. All white papers have small amounts of red, yellow and blue dye to adjust the color of the raw pulp.

Groundwood and Freesheet: Freesheet or “woodfree” papers are made with a chemical pulp (or kraft) process that removes lignin and other components of wood from the cellulose fiber. In contrast, groundwood papers, originally made with mechanically ground pulp, are more like newsprint and retain the lignin which makes paper turn yellow and brittle. Groundwood now includes pulp from hybrid systems, such as semi-mechanical, thermo-mechanical and chemi-thermomechanical, that remove some but not all of the lignin. Freesheet papers may contain up to 10% groundwood pulp and still meet specifications.

Groundwood is a contaminant in recycling systems for freesheet papers because it has shorter fibers and introduces lignin. Generally, recovered paper with groundwood is downgraded for lower end-use products like corrugating medium and tissue. Such downgrading at one federal Department of Energy recycling program meant losing \$270 per ton for its recovered paper in 1995.

The new groundwood papers used in copiers and printers cannot be recycled routinely into newsprint. The plastic-based inks are much harder to remove than the water-based inks used to print newspapers. Some systems can accept up to 10% groundwood with laser ink but many cannot.

Moisture Content: Moisture is always present in paper but too much can interfere with copy paper performance. Reasonable care can reduce problems. Avoid storing paper in damp warehouses and keep paper in its sealed cartons and ream wrappers until it is used. Paper and copiers in air conditioned spaces have fewer problems.

Recycled Content: Most paper companies offer recycled copy paper. A few world-class integrated mills have deinking systems on-line now and a few more are on the planning boards or in start-up phases. As these integrated mills produce recycled paper efficiently in huge quantities, costs will begin to drop. Many stand-alone deinked pulp mills serve paper mills without their own deinking capacity.

When the federal Executive Order described below was published in 1993, many paper mills switched their recycled copy paper production to postconsumer content alone. Many copy papers on the market today have no preconsumer content or it is not revealed in advertising and certifications. Standards all over the country are being changed to reflect the new market realities.

EPA Designation

EPA designated copy paper with all other bleached high grade printing papers, except high-speed copy paper, in the 1988 Paper Procurement Guideline. The recycled content requirement was 50% "waste paper." The May, 1995, Recovered Material Advisory Notice (RMAN) used the same recycled content requirement and included high-speed copy paper.

Minimum Recycled Content Standards

The Federal Acquisition, Recycling and Waste Prevention Executive Order 12873 of October 20, 1993 established 20% postconsumer requirements for commodity printing papers and 50% recovered material with 20% postconsumer material requirements for non-commodity papers. The postconsumer fraction rises to 30% on December 31, 1998.

The March, 1995, EPA Paper RMAN proposed changing recycled content requirements according to fiber weight for uncoated papers to match the Executive Order. With 1994 legislation, the State of California adjusted its recycled printing paper standards to those of the Executive Order and to measure percentages by fiber weight. See Chapter 5: Definitions for a discussion

of fiber weight and total weight and Table 6-II in Chapter 6: Recycled Content Standards for all the paper recycled content standards.

The recommended recycled content standards for copy paper match the State, the Executive Order, the proposed direction of EPA and refer to total fiber, not total weight.

Recommended Postconsumer Recycled Content 1995 = 20%
1999 = 30%

Reduction Opportunities

Using less paper saves money as well as waste. An EPA “paperless office” campaign reduced paper use by 15%, or 33.4 million copier impressions, between 1993 and 1994. Their strategies included:

- setting copier defaults to automatically double-side
- using electronic mail and document distribution
- using half sheets for staff notes
- using paper printed on one side to print drafts
- posting notices on bulletin boards
- paring newsletter and other distribution lists
- downsizing documents
- proofing and editing documents on-screen

Lighter weight paper can help too, as long as equipment is adjusted to work with thinner sheets. If you still use 24 lb. copy paper, try switching to the 20 lb. standard.

Alameda County generates its letterhead and fax forms through its computer software templates. The county may use more copy paper, but outdated letterhead and forms are eliminated. Many governments replaced printed forms by using similar software to generate purchase orders, bids and other documents.

Certain dyes are harder on recycling systems than others. “Goldenrod” yellow and neon colors are particularly difficult to remove. Since paper mills offer a wide range of softer colors that can meet any jurisdiction’s requirements, it is time to phase “goldenrod” and “neon” out of your color coding systems.

Cost

Recycled copy paper still costs more than virgin counterparts. Mill representatives stated in November, 1995, that the wholesale price differential is 5% to 10%, down somewhat from earlier 10% to 13% levels.

Data are sparse, but the California Integrated Waste Management Board (CIWMB) conducted informal research during the Fall of 1995. CIWMB found that the wholesale merchant's price difference between virgin and recycled 20 lb. white reprographic paper rose from 11.5% in January, 1994, to 18% in September, 1994, then dropped erratically to 9.5% in September, 1995. Some paper mills raise and lower their recycled paper prices together, others adjust prices independently according to market demand.

CIWMB also tracked price increases for the same virgin grade. The wholesale price per ton rose from \$735 in July, 1994 to \$1,220 in September, 1995 or 66% in 14 months. Paper mills were making up for several years of losses during the early nineties.

Price rises stopped and were trending downward for both types of paper in late 1995 as demand slowed across the country. Traditionally, demand drops during the winter and picks up again in the spring. In March, 1996, paper prices were still trending downward.

Wholesale prices are not reflected exactly by distributors. They have their own mark-ups and must clear their warehouses of existing stock before adjusting prices. For example, average price differentials for paper under contract to Alameda County went from 18% in most of 1995 to 9% in September then back to 13% in October. Distributors sell virgin paper faster than recycled paper. They must sell off higher priced recycled stock before they can offer lower prices, even if prices for new shipments of virgin and recycled paper drop at the same time as they did in October.

Jurisdictions that have flexibility to raise their price preference ceiling in cases like this can maintain demand when prices fluctuate. See Chapter 7: Price Preferences.

For the next few years buyers can hunt for bargains. As companies with new recycled lines seek to capture market share, they offer better prices. During 1995, for instance, an excellent quality recycled copy paper from an eastern mill was less expensive than comparable paper from nearby western mills, despite the shipping costs.

SPECIFICATION ISSUES

Most jurisdictions in Alameda County order copy paper by basis weight, size and color as well as brightness and opacity for white paper. Some wisely list the types of equipment on which the paper will be used.

Brightness is no longer really necessary for copy paper. Many specifications have eliminated brightness requirements.

The presence or absence of groundwood content in copy paper will depend on your recycling program. Groundwood paper with high levels of recycled content may be inexpensive to buy, but it can cause havoc with your office paper recycling program. It is a good idea to check with your recycling coordinator before making a change. A little research into your local scrap paper markets will help you decide if the change will be cost effective when recycling revenues are considered.

Standard Specifications

There still is no standard specification for copy paper. The ASTM D6 Paper Committee has labored for years to develop a standard specification for copy paper that includes paper with recycled content. As of March, 1996, it was not completed.

You should exercise caution when referencing ASTM paper standards. While they may appear to allow recycled paper, the key recycled terms may mean very different materials than you expect. As on March, 1996, there was no postconsumer feedstock category included in proposed ASTM terms and definitions for recycled paper.

Test Procedures

All manufacturers test their paper to exacting specifications on a regular basis. They do so for quality control reasons. Unpublished results from several companies show little difference between their recycled and virgin grades.

During the past ten years, numerous jurisdictions and organizations conducted blind tests of recycled copy papers on their equipment. It did not jam or cause problems any more frequently than virgin counterparts. Today, even most equipment manufacturers agree that recycled paper works as well as non-recycled.

If you have user complaints, you can conduct informal blind tests yourselves. Immediately after the equipment has been serviced, supply an unmarked case of recycled paper to the source of the complaint followed by an unmarked case of virgin paper with the same caliper and basis weight. Only you should know which paper is which. Have the users carefully track jams and other problems for each case. A check off list at the copier works well. Ask the users to set aside unacceptable copies or jammed sheets for each batch, then compare results between the two types of paper.

Adjusting Specifications

You may not have to adjust your existing specifications at all, except to include the recycled content standard. If you must specify brightness, a minimum of 80 should satisfy your needs. Opacity is more important than brightness today because double-sided copies must be legible. The following specifications are a good model to follow:

Grade:	4 (possibly N for natural)
Recycled content:	20% postconsumer (30% in 1999)
Basis weight:	20 lb. (or sub 20)
Color:	white or list colors (no goldenrod or neon)
Opacity:	minimum 85
Equipment Used:	list what you use

USING AGENCIES

Every agency uses copy paper. Most jurisdictions have long-term contracts in place. Paper is delivered on request by the supplier or from jurisdiction warehouses.

USAGE ISSUES FOR RECYCLED COPY PAPER

Paper that works smoothly in equipment is most important to users. No one has time to waste un-jamming printers and copiers. Paper should also feed smoothly through printers and fax machines without crooked margins, overlapping or dusting.

The Fremont recycling coordinator surveyed Fremont agencies in November, 1995 regarding their use of, and attitudes about, recycled copy and printer paper. Nine of the responding twenty-two agencies use recycled paper in copiers and printers and reported no problems. Non-users cited price and quality as their reasons. Commentators mentioned copier jamming most frequently as the problem.

As reported in the December, 1995, *Paper Task Force Recommendations for Purchasing and Using Environmentally Preferable Paper*, the Environmental Defense Fund Task Force interviewed paper and equipment manufacturers extensively. It found the frequency of copy machine jams is not correlated with use of recycled paper. Most jams are a function of two-sided copying, the speed and condition of the equipment, operator errors and the quality of the virgin or recycled paper used.

If you still have problems with recycled copy paper after the equipment has been adjusted properly, try another brand. Two neighboring communities in Alameda County have the same brand of copier. One reported problems with recycled paper while the other used recycled paper exclusively without mishap. Matching paper quality and equipment compatibility is important for both virgin and recycled paper.

SOURCES FOR RECYCLED COPY PAPER

All recycled product directories list sources for recycled copy paper. Trade publications offer annual lists by grade and manufacturer. These are listed with other paper sources in Appendix III: Resources.

The Alameda County Source Reduction and Recycling Board maintains a list of local printers and copy shops that stock recycled paper. The Alameda County contract for recycled copy paper is open to all jurisdictions for cooperative purchasing.

FIBERGLASS INSULATION

Recycled content guidelines to date include only thermal building insulation, not noise insulation, pipe insulation or other insulating uses. Insulation helps protect indoor temperatures from exterior temperature variations. The standard measure is R-value which represents thermal resistance. The higher the R-value the better the product insulates.

Fiberglass insulation producers spin fibers from molten glass made with sand, limestone, soda ash, dolomite, borate, an aluminous material such as feldspar and crushed glass (cullet). The fibers are coated immediately with a binder, collected and cured in an oven, then formed into batts or chopped for loosefill.

Although fiberglass is discussed in this section, all types of building insulation contain recycled content today. Insulation made with other materials, and often higher recycled content levels, exists for every fiberglass insulation application.

APPLICATIONS

Fiberglass building insulation comes in several forms. Batt and board may have many different surface treatments or coatings.

- **Batt:** sometimes called blanket, comes in rolls of pre-determined widths. Installers primarily use it between joists in new or retrofit residential construction.
- **Loosefill:** also called blowing or pouring wool, is bagged. It is blown into cavity spaces in new and retrofit residential construction.
- **Board:** also called block or sheet, is a stiff product used primarily in commercial and industrial applications. Board is about one percent of the fiberglass market.

Similar Products or Uses

EPA provides minimum recycled content standards for cellulose, rock wool, perlite composite board and plastic rigid foam insulation. At least two manufacturers make recycled rigid polystyrene board. Several manufacturers combine recycled polystyrene with concrete block or concrete-based wall and foundation systems. These materials cover all major building insulation applications.

Some specifiers now call for a new insulation product made with recycled preconsumer cotton or cotton and polyester. This product was not on the market when EPA issued the initial insulation guideline in 1989.

Related insulation products with recycled content include vapor barriers and trays that reduce air infiltration.

ATTRIBUTES

Fiberglass can be made with recycled glass (cullet). EPA and California standards allow for preconsumer cullet from non-fiberglass sources. However, spokespersons from the California Department of Conservation who monitor fiberglass manufacturer compliance with the minimum content law say that California manufacturers primarily use bottle cullet. Manufacturers in other parts of the country rely on preconsumer window glass scrap because it has fewer contaminants.

EPA Designation

EPA designated fiberglass insulation, as well as all but cotton/polyester and polystyrene building insulation products, in May, 1995.

Minimum Recycled Content Standards

The EPA minimum recycled content standard is 20% to 25% cullet. However, California law requires all fiberglass insulation sold in the state to contain a minimum of 30% cullet as of January, 1995. According to the California Department of Conservation, all producers are in compliance.

The recommended minimum recycled content standard follows California law since fiberglass insulation that does not meet the requirement should not appear in California markets.

Recommended Recycled Content = 30% Cullet

Reduction Opportunities

Careful planning by architects and contractors can eliminate scrap insulation. Order quantities should match requirements rather than exceed them.

Construction Specification Institute (CSI) Titles and Numbers

Insulation appears in CSI section 07200, Insulation, in the 07000 division, Thermal and Moisture Protection.

Cost

Insulation with recycled content is cost-competitive with virgin counterparts. The comparative costs for different types of insulation depend on framing and roofing variables.

SPECIFICATION ISSUES

All types of insulation have recycled content and practice over several years shows no need to revise specifications. You can continue to use the standard specifications familiar to your contractors.

Adjusting Specifications

You should review construction contract boilerplate to be certain that recycled products are allowed. Then you should insert the minimum recycled content standards for fiberglass or other types of insulation in the insulation specifications.

When using brand name or equal specifications, you should select a brand known to meet the minimum recycled content requirement. Manufacturers and their distributors should have this information at their fingertips.

Contracts commonly require Underwriters Labs Inc. (UL) certifications. Certifications for recycled content should be required as well in bid documents.

USING AGENCIES

Public Works, General Services, Transportation and Parks and Recreation agencies are most likely to buy building insulation or specify it in their construction contracts.

USAGE ISSUES FOR RECYCLED BUILDING INSULATION

There are no general issues for insulation with recycled content. Architects should continue to specify products that meet their overall design requirements.

Some fiberglass insulation companies have had their products certified by outside organizations. The California Department of Conservation has a list of all companies that meet state recycled content requirements.

In the case of polystyrene board, some polystyrene and concrete combinations and the new cotton or cotton/polyester insulation products, there may not be enough companies for adequate competition in government markets. You should evaluate whether this is an issue then research producers if you need two or more competitors.

SOURCES FOR RECYCLED FIBERGLASS INSULATION

The best local source list is distributed by the California Department of Conservation which certifies compliance with the law. Product lists from certification organizations are helpful too. Most directories of recycled construction products include fiberglass insulation companies but they may not list every one.

FILE STORAGE BOXES

Governments use file storage boxes, also called record storage boxes or transfer files, to transfer paperwork to long-term storage. The paperwork remains in the boxes until it is needed or recycled.

Some governments have annual contracts for file storage and other boxes. Others order them through their office supply catalogues.

APPLICATIONS

Record storage boxes have covers to keep contents clean and holes in the side of the box to serve as handles when moving the boxes from place to place. They are stored in racks. Two boxes may be stacked one on top of the other to save space. Some storage boxes, called transfer files, have metal-rimmed sleeves around a file “drawer” with an affixed handle so that old paperwork is easy to retrieve when stored on shelves. Local California governments used transfer files less frequently than record storage boxes.

File storage boxes come in several styles and sizes. They can be letter or legal sized or a special size to hold particular types of records, like checks. Box bottoms can be solid for extra strength or have interlocking flaps.

Similar Products or Uses

Governments can specify the same recycled content standards for all corrugated fiberboard items they buy. Examples include:

- shipping cartons
- moving boxes
- target backing

ATTRIBUTES

The paper industry does not recognize “cardboard”, the term so familiar to everyone. “Paperboard” is heavier, thicker and stiffer than “paper.” The four subdivisions in paperboard are: containerboard, boxboard, industrial paperboard and miscellaneous. Containerboard includes the brown corrugated fiberboard used for most boxes as well as solid fiberboard used in strong specialty boxes. Few local governments use solid fiber boxes.

Corrugated fiberboard (CF) is made of linerboard (the flat top and bottom layers) and corrugating medium (the fluted paper in the center). There can be several layers of linerboard and medium depending on the required strength of the finished box. Most governments use standard “singlewall” boxes with two layers of linerboard around one layer of medium. “Doublewall” corrugated has five layers of linerboard alternating with two layers of medium.

White corrugated fiberboard simply has bleached white fiber on the linerboard surface. This fiber can be virgin or recycled. “White top” is solid white and “mottled white liner” lets some brown show through. Labels are easier to print on white outer surfaces but brown corrugated costs less.

Box converters may make their own corrugated fiberboard from rolls of linerboard and medium or they use prepared corrugated shipped from the paper mills. Most types of boxes are shipped and stored unassembled. There is little difference between the corrugated used for file boxes and the corrugated used in shipping cartons.

The most common corrugated box used by governments for shipping and file storage is: Type CF (Corrugated Fiberboard), Domestic Class, Singlewall, 32ECT (or 200 psi) designed to hold a maximum of 65 pounds. The last characteristics define grade or strength. There are two methods to test for strength.

Edge Crush Test (ECT): measures the minimum pounds of pressure required for a sheet of corrugated to bend and crease when pressure is applied to the edge of the fiberboard. A 32ECT box will withstand 32 pounds of pressure before its walls crush out of shape.

Mullen Burst Strength Test: measures the pounds per square inch (psi) necessary to puncture the wall of a corrugated box. A 200 pound test (or 200 psi, or 200 Grade) box will withstand 200 pounds of pressure before a hole is punched in the side.

Shippers now place more emphasis on compression strength than on puncture resistance. At the same time, advances in corrugated manufacture produce stronger fiberboard at lower weights. The lower weight, stiffer, corrugated fiberboard meets the new ECT test and allows less material to meet performance expectations. The ECT test is the accepted alternative to Rule 41, Item 222 in Consolidated Freight Classification Truck and Rail Regulations. Military specifications are being revised as well.

Shipping by rail or truck determines strength requirements for corrugated fiberboard. Shippers will not honor damage claims if boxes are filled over the specified weight limit.

Recycled Content

Corrugated fiberboard with recycled content is tested the same way as its virgin counterparts. In the same grades, recycled and virgin products have identical strength.

Manufacturers compute the total recycled content of corrugated by adding up the percentage of recycled fiber in each layer of linerboard and corrugating medium. Historically, linerboard was virgin and the medium could have old corrugated as feedstock. Today, each component may have high percentages of postconsumer material. Buyers do not have to compute total recycled content because their suppliers should have all the necessary information.

ASTM developed a new standard to help manufacturers certify recycled content in all types of paperboard. Now mills can provide data to box converters based on the ASTM D5663, Standard Guide for Validating Recycled Content in Packaging Paper and Paperboard.

As of August, 1994, the federal General Services Administration could not get heavier boxes (with bursting strength over 300 psi) with more than 30% postconsumer content. There were no problems getting 40% postconsumer content in boxes less than 300 psi. Most of the heavy boxes are exterior, weather-resistant shipping containers. File boxes and most corrugated boxes bought by local governments are less than 300 psi.

EPA Designation

EPA designated corrugated boxes with 35% postconsumer content in the 1988 recycled paper guideline. The May, 1995, Recycled Materials Advisory Notice (RMAN) continued the designation with the same recycled content standard. EPA changed the corrugated standard to 40%-50% postconsumer content for > 300 psi boxes and 30% postconsumer content for < 300 psi boxes in the March, 1995, proposed revisions to the paper RMAN.

Minimum Recycled Content Standards

Converters who supply file storage boxes in Alameda County stock corrugated with high postconsumer content. The recommended minimum content standard meets the current EPA standard, the proposed EPA standard and the general California 50/10 standard for total recovered material.

Recommended Postconsumer Recycled Content = 50%

Reduction Opportunities

Alameda County personnel report using their file storage boxes until they are ragged. This saves replacement costs as well as waste. You can realize additional reduction through changes in your specifications as well as through changes in how you use file storage boxes.

Specification: By changing the grade from burst strength (psi) to Edge Crust Test (ECT), you can reduce box weight. For example, 32ECT is roughly equivalent to 200 psi but the comparison is not exact. According to one company known for its strong products and its testing program, there is 17% less fiber in the 32ECT box but it is about 5% weaker.

However, this weakness doesn't matter with file storage boxes. A 32ECT box is intended to hold 65 pounds when files rarely weigh more than 30 pounds per storage box. The crushing strength applies to shipping boxes which are piled high one atop the other on pallets. Files in long-term storage racks are rarely stacked more than two boxes high.

Stacking Practices: You can preserve boxes when they are stacked temporarily for shipment to long-term storage. If you stagger box stacks like bricks so the edges don't carry all the weight, you spread the weight and the contents help support the boxes above.

Labeling Practices: Most file storage boxes have a spot to indicate the contents. It is easy to put a new, blank label on a box and return it to use when files are purged.

Repair Practices: The supervisor of the long-term file storage facility in Suffolk County, NY saves parts from damaged transfer boxes to repair handles and tops before sending boxes back into service.

Cost

File storage boxes and other types of boxes with the recommended minimum postconsumer content are competitively priced with boxes that have less recycled content.

SPECIFICATION ISSUES

It is easier to get high percentages of postconsumer content if you select standard sizes and colors. This helps box converters stock the boxes you need and avoid costly custom runs. Since color is not important for file storage boxes, you should specify brown. Even when local governments follow federal

government standards it is realistic to specify corrugated box grades measured by the Edge Crush Test instead of by bursting strength.

Standard Specifications

The federal General Services Administration replaced its familiar PPP-B-636 standard with two ASTM standards in March, 1994.

ASTM D4727 Standard Specifications for Corrugated and Solid Fiberboard Sheet Stock (Container Grade) and Cut Shapes: This standard describes the required characteristics and test parameters for fiberboard used to make boxes.

ASTM D5118, Standard Practice for Fabrication of Fiberboard Shipping Boxes: This standard describes how boxes are to be made and any tape or closure requirements.

Test Procedures

The ASTM standards still use Mullen burst tests for strength. However, the Fiberboard Box Association and other organizations concerned with shipping regulations strongly favor the Edge Crush Test because it applies more accurately to boxes. The ASTM test method for ECT is:

ASTM D2808, Standard Test Method for Compressive Strength of Corrugated Fiberboard (Short Column Test): This method tests the vertical flutes of the medium in combination with the flexural stiffness of the linerboard.

Adjusting Specifications

File storage box suppliers appreciate clear specifications. A good specification that meets source reduction and recycling goals would be:

Recycled Content:	50% postconsumer fiber
Type:	CF (Corrugated Fiberboard)
Class:	Domestic
Grade:	32ECT (32 pound Edge Crush Test)
Variety:	Singlewall
Color:	Brown
Size:	15" x 12" x 10" or 15 1/4" x 12 1/4" x 10"
Lid:	Separate or Attached Lid
Pallet Size:	48' x 40'

USING AGENCIES

All department use file storage boxes to house and transfer outdated files. Some use these boxes for overflow when file cabinet space is limited.

USAGE ISSUES FOR FILE STORAGE BOXES

Boxes must be sturdy and easy to assemble. There must be labeling systems to identify the contents when the boxes are new and when they are reused.

SOURCES FOR FILE STORAGE BOXES

All box converters offer file storage boxes. Office supply houses do so as well. Northern California is well supplied with mills that produce medium and linerboard with high percentages of postconsumer content. Your existing vendors should be able to meet your needs.

FLEXIBLE DELINEATOR POSTS

Delineator posts, sometimes called highway delineators, define boundaries. Vehicles can hit or roll over these flexible posts without damage to the vehicle. The posts flex back to their original position. Many posts are designed so that lawn mowers and snow removal equipment can roll over posts without damaging them. Reflective sheeting is attached to posts to help visibility at night.

Driveable delineators are one-piece stakes driven into the ground. Attached metal U-channels or unattached metal anchors in the ground may be used.

Surface-mounted delineator posts have a locking base to hold the post permanently in place on top of pavement. Some posts have flexible hinges.

APPLICATIONS

Street maintenance agencies and construction contractors use delineator posts on construction sites, medians, on/off ramps, mountainous terrain and in areas where smoke, rain, fog and haze are common. Installation may be permanent or temporary. Uses include: road, mile, boundary, guard rail and hazard markers.

In addition, flexible posts can be installed at golf courses, airports, military bases, shopping centers and recreation areas. They can mark buried utility lines to avoid damage during construction projects or to locate utilities in adverse weather. Utility examples include: telephone lines, electrical lines, fiber optic cables, sewers, oil and gas lines and water pipes. Snow poles are popular in some climates.

Similar Products or Uses

Companies that produce flexible delineator posts may also offer other products using similar recycled materials and technology. Examples:

- Bridge marker post and sign systems
- Bi-directional channelization post and sign systems
- Flexible bridge markers
- Park identification markers

Temporary delineator posts are moved from place to place like traffic cones. Heavy bases, often made with high percentages of recycled tire rubber, hold replaceable hollow posts designed to pop out rather than flex in response to repeated impacts.

ATTRIBUTES

Flexible delineator posts are made from various plastics and fiberglass. Non-fiberglass resins may be polycarbonate, polyethylene, high impact polystyrene, other high impact polyolefins or combinations of resins.

EPA Designation - None

EPA is evaluating additional transportation products for potential designation. Research includes delineator posts but potential designation will not be known until EPA publishes its proposed Comprehensive Procurement Guide in 1996.

Minimum Recycled Content Standards

EPA has no recycled content levels for flexible delineator posts. California standards for plastic products are 50% recovered material with 10% postconsumer material.

The State of Florida requires recycled plastic in delineator posts. Several producers now incorporate recycled content in their product specifications. The amount and type of recycled content varies among companies.

Companies that use recycled tire rubber for surface-mounted or temporary delineator posts may cite high postconsumer content for total product weight because rubber is so much heavier than the plastic used in the posts themselves.

Recycled content for flexible posts should be expressed by total weight of the post alone. Bases for temporary posts should be postconsumer rubber. Some companies erroneously interpret postconsumer to include preconsumer material from industrial scrap. While some companies may claim higher percentages of postconsumer recycled content, the recommended minimum percentage assures the widest range of competition and allows room for industrial scrap in the balance of the product make-up.

Recommended Postconsumer Recycled Content = 25%

Reduction Opportunities

The more durable the post, the less frequently it must be replaced. This saves labor and product costs as well as waste. Some plastic delineator post manufacturers advertise extended durability of their products. Recycled plastic posts can be recycled into new posts. Some manufacturers have buy-back programs to facilitate recycling.

Cost

Recycled plastic delineator posts vary in price. Some are no more expensive than virgin counterparts while others cost considerably more.

SPECIFICATION ISSUES**Standard Specifications**

Most local governments in California use CalTrans approved traffic devices lists. CalTrans tests all versions of delineator posts according to its specifications for: Driveable Flexible Plastic Guide Marker and Clearance Marker Posts. At least three of the Class I delineators on the June 20, 1995, list were made by companies that use recycled plastic. Another approved company will submit a recycled version in early 1996.

CalTrans specifications are recycled content neutral. Durable, white plastic must be resistant to impact, ultra violet (UV) light, ozone and hydrocarbons. Other specifications for the post include width, length, base anchoring, color, heat resistance, cold resistance, color fastness and impact resistance. At specified temperatures and angles, posts must withstand 10 impacts at 35 miles per hour and 5 impacts at 55 miles per hour.

Test Procedures

Both CalTrans and the American Association of State Highway and Transportation Officials (AASHTO) National Transportation Product Evaluation Program (NTPEP) test delineator posts without regard to recycled content. Recycled plastic posts that pass these tests are equal in performance to virgin alternatives.

The Florida Department of Transportation conducted 6 month weatherization and other performance tests for delineator posts. Since Florida was the pioneer for recycled plastic transportation products, manufacturers often tested their products first in Florida. In addition to heat resistance, impact resistance and colorfastness, Florida specifications require herbicide resistance and replacement by the manufacturer if driven posts fail within 1 year or if surface mounted posts fail within 6 months after normal wear.

Adjusting Specifications

You can continue to use CalTrans-approved product lists. It is the California industry standard. However, you should insert the minimum recycled content standard in your bid documents and allow for non-white products if allowed by traffic safety regulations.

You also should define postconsumer material in your bid document, include a strongly worded certification requirement for postconsumer recycled content, and require a manufacturer's signature. This will signal your intention to obtain postconsumer plastic rather than industrial scrap.

USING AGENCIES

Public Works agencies and street maintenance departments are the principal users of delineator posts for roadways. Construction and Maintenance departments may use them to mark utility lines. Parks and Recreation Agencies may use them in golf courses and parks to define paths and other areas.

USAGE ISSUES FOR FLEXIBLE DELINEATOR POSTS

Durability, UV light resistance and sustained impact resistance are most important to users. The longer the post lasts, the less frequently it must be replaced.

Ease of installation will matter too, because posts that are difficult to install will absorb too much labor time. Manufacturers sell special tools designed for their own types of post. Some recycled plastic delineator posts use a metal anchor in the ground to hold driveable delineator posts. When the posts eventually wear out, a new post is inserted in the same anchor. Other posts use attached metal U-channels.

SOURCES FOR RECYCLED DELINEATOR POSTS

The Recycled Product Guide began expanding its list of delineator posts in 1995. Other recycled product directories may include delineator posts as well. The Florida Department of Transportation changed focus in late 1995 and may no longer circulate its lists of recycled plastic transportation products. To date, standard directories for traffic control devices do not identify those with recycled content.

INTER-OFFICE ENVELOPES

Organizations use reusable inter-office envelopes to transmit documents internally rather than through the mails. They may have printed lines for 50 or more succeeding addressees. Flaps are closed with strings and buttons, clasps, reusable adhesives or Velcro so envelopes can be opened and closed numerous times. Standard sizes are 10" x 13", 5" x 11 1/2" and 12" x 15 1/2".

APPLICATIONS

At least eight jurisdictions use inter-office envelopes in Alameda County. According to Oakland and Alameda County representatives, they are used to the last line. In the County, employees attach sticky labels to extend envelope life when all address lines are used up. If employees use disposable envelopes in Oakland, administrative bulletins quickly re-educate the back sliders.

Some communities purchase inter-office envelopes through their envelope contracts. Others order them through their office supply contracts.

Similar Products

Alameda County governments commonly order 9" x 12", 9 1/2" x 12 1/2" and 10" x 13" mailing envelopes. Heavy duty mailing envelopes use the same type of paper as inter-office envelopes. Some also buy 6" x 9" and 10" x 15" envelopes.

ATTRIBUTES

Inter-office envelopes can be white, "manila" or golden tan. Most kraft envelopes are white paper dyed the familiar golden tan color. Manila envelopes are buff colored and may or may not be dyed white stock. A few envelopes are made with unbleached paper similar in texture to paper bags. The choice of color or paper type does not affect quality.

Basis weight determines the strength of envelope paper. Two terms are used: "28 lb." paper is the same as "sub 28" paper. White wove paper, used for the most common number 10 business envelopes, is sub 20 or sub 24. Larger mailing envelopes are sub 24, sub 28 and sub 32. The higher the weight the heavier, stronger and more expensive the paper. Manufacturers recommend sub 32 for inter-office envelopes because heavier papers are more durable.

Converters produce envelopes locally from rolls of paper shipped from distant mills. Since paper rolls are huge and represent large quantities of finished envelopes, converters will only stock paper in high demand. Most converters now

stock recycled white wove paper used for number 10 envelopes because so many customers want recycled envelopes.

Few converters in the Bay Area stock recycled paper for large envelopes. They will produce recycled mailing and inter-office envelopes on special order. The higher costs for their own small-quantity special orders of recycled paper is reflected in the unit price. Recycled prices can range 20% to 60% more expensive. Envelope converters will not carry recycled paper as a stock item until demand grows significantly.

EPA Designation

EPA designated envelopes with 50% waste paper content in its original 1988 paper guideline. There was no distinction between white wove envelopes and heavier mailing envelopes. Envelopes were designated in the May, 1995 Recovered Material Advisory Notice (RMAN) as well.

Minimum Recycled Content Standards

EPA clarified the difference between white wove envelope paper and the heavier kraft, manila and unbleached envelope grades in the March, 1995, proposed RMAN. EPA research supported recommendations for 10% to 20% postconsumer fiber in kraft (white and colored) and manila grades and 10% postconsumer fiber in unbleached grades. EPA proposed eliminating the recovered material requirement in response to the Presidential Executive Order 12873 of October 20, 1993, Federal Acquisition, Recycling and Waste Prevention.

California adjusted its recycled paper legislation in 1994 to conform to the Executive Order. Although the California law does not mention envelopes specifically, the most recent EPA research determined that uncoated printing and writing paper mills produce all but unbleached envelope paper. Consequently, kraft and manila envelope grades would have a 20% postconsumer fiber content requirement under California law. This postconsumer standard rises to 30% in 1995.

Envelope paper with 20% postconsumer fiber reaches California markets. The recommended recycled content standard conforms to current California and proposed EPA standards.

Recommended Postconsumer Recycled Fiber Content = 20%

Reduction Opportunities

Reusable inter-office envelopes replace disposables. They save waste as well as postage costs. An internal mail delivery system must be in place.

These reusable envelopes can save even more waste when use is extended creatively. For example, the Alameda County Purchasing Department provides inter-office envelopes and address labels to its office supply vendor for invoices that must be approved by departments then sent to the purchasing department for payment. The vendor drops off invoices by the box-full for distribution in this closed loop system. Not only do both parties save on envelope costs and related waste, the vendor saves on postage and nothing gets lost in the mail.

Previously bleached paper fiber is easier to use in paper deinking systems. Now that many expanding paper collection programs include envelopes, you can improve recyclability by avoiding unbleached mailing envelopes.

Adhesives are contaminants in recycling systems. If you must use labels on inter-office envelopes, be sure the adhesive is designed for recycling.

Saving money with lower basis weight paper is a great idea as long as the envelopes are strong enough for standard uses. Beware though, inter-office light weight envelopes that tear in use may cost more in the long run.

E-mail is the ultimate source reduction solution. When you send messages by computer, you reduce paper as well as envelopes. Government spokes-people stress adequate and repeated training for E-mail systems. People who are uncomfortable with new technology will not use it.

Cost

The few local converters that stock recycled mailing and inter-office envelopes estimated in late 1995 that recycled prices were 10% to 15% higher than virgin counterparts. The Alameda County 1995-1996 office supply catalog listed sub 32 virgin envelopes and sub 28 recycled envelopes. This is a national distributor that stocks recycled envelopes. Even though different basis weights do not give a true comparison, price differences per units of 100 for the three recycled sizes shown were:

6" x 9"	savings of 46.6% for recycled
9" x 12"	savings of 7.1% for recycled
9 1/2": x 12 1/2"	higher cost of 9.9% for recycled

SPECIFICATION ISSUES

Your existing specifications need few changes. However, to increase availability of recycled envelopes, you may want to evaluate the color, type and weight of the inter-office and large mailing envelopes you now order.

Cooperative Purchasing Opportunity

Government orders are small in the envelope trade which deals in hundreds of thousands. However, all Alameda County jurisdictions together use enough envelopes to change local converters' practices. This is the perfect situation for cooperative purchasing. If cooperative purchasing is not practical, repeated bid requests for large recycled envelopes from many buyers will stimulate suppliers to offer recycled envelopes in their standard lines. This worked with white wove envelopes.

Most governments order envelopes in standard sizes. If they request the same basis weight and color, converters could stock recycled paper and finished envelopes to meet the demand. Printing is not an issue. Envelope converters would treat special printing requirements the same way they do now with the virgin envelopes they currently stock.

Standard Specifications

With well established products like large mailing envelopes, simple specifications work well. You will need the size, basis weight, color and type of closure for blank envelopes. Additionally, for inter-office envelopes you may want to specify special printing and the arrangement of lines for addresses. Some inter-office envelopes have holes in the body of the envelope so that users can see whether documents are inside.

Test Procedures

Although paper mills test envelope paper as a matter of course, you should not need special test data. If you introduce a new type of envelope, monitor it in use and keep track of comments. It is a good idea to use blind tests for recycled products so that users are not prejudiced in their responses.

Adjusting Specifications

First, you should include the recycled content standard in the specifications you use now. The basis weight should be sub 32 for recycled heavy duty and inter-office envelopes or sub 28 for standard recycled mailing envelopes. If you request alternative bids for recycled and virgin counterparts, you will be able to track price differences.

If you cannot enter a cooperative purchasing agreement but want to help increase demand for recycled inter-office and mailing envelopes, consider reviewing your envelope requirements. Talk with your counterparts around the county. Then switch as many envelopes as possible to the same weight, color and type of paper.

According to contracts reviewed by the project team, the most commonly used paper for standard mailing envelopes is sub 28, golden tan “kraft”. The most common heavy duty and inter-office envelopes are made with sub 32, golden tan “kraft”. There are recycled equivalents in both weights. This type of paper accepts printing well so you can order printed as well as blank envelopes.

USING AGENCIES

All agencies use inter-office envelopes. General Services agencies commonly order them on annual contracts or include them in office supply contracts.

USAGE ISSUES FOR RECYCLED INTER-OFFICE ENVELOPES

The most important issue for inter-office and large mailing envelopes is strength. Nothing is more annoying than delays in the mail because an envelope burst apart during handling. Strong, durable inter-office envelopes have the longest lives.

SOURCES FOR RECYCLED INTER-OFFICE ENVELOPES

Although most local envelope converters do not currently stock recycled paper for large envelopes, they will do so as demand increases. Most office supply companies offer recycled envelopes.

The Alameda County Source Reduction and Recycling Board has a data base with several local converters who have recycled envelopes. Standard recycled product directories list envelopes, but rarely distinguish between number 10 envelopes and the large mailing and inter-office types.

PAPER TOWELS

Governments buy three types of paper towels: bleached (white), semi-bleached or natural (off-white), and unbleached or kraft (brown). All paper types can be in roll or in folded form (singlefold, C-fold and multifold).

People use more folded towels than roll varieties because: they pull folded towels out of dispensers by the handful, they rarely unfold towels before using them and they take towels to their desks to mop up spills. Dispensers control the amount of paper for roll towels and they are not as wide as folded towels so less paper is used per “handwipe.”

By changing from folded towels to roll towels, you can reduce waste 25% to 35% in toweling alone. There are packaging, cost and labor savings as well. Roll towels do not have to be replaced as frequently. Dispensers that hold 800 feet rolls as well as stub rolls (partially used rolls) are the most cost-effective in maintenance terms. Replacing the existing folded towel dispensers is the only major drawback and it is short term.

APPLICATIONS

Recycled content is common in paper towels bought by governments. Most governments in Alameda County currently specify recycled paper towels. Some order bleached towels, some order unbleached towels and some order both. All order far more folded towels than they do roll towels.

Similar Products or Uses

“Tissue” paper includes towels, toilet tissue, facial tissue, napkins and industrial wipers. Most tissue manufacturers make all of these products for “consumer” and “commercial-institutional” markets. Like towels, toilet tissue can be dispensed in jumbo rolls to reduce maintenance costs.

ATTRIBUTES

Paper

Tissue producers can use a wider range of recovered paper than printing paper manufacturers because printing paper has such different performance requirements. Mixed postconsumer office paper is a common feedstock whether recycled towels are bleached, semi-bleached or natural. Since pulp from office scrap is grayish, semi-bleaching improves the color. Some unbleached towels may be dyed brown to obtain the “natural” color.

Towel paper is made in basis weights. Standard basis weights are 25 lb., 28 lb. and 30 lb. The heavier the paper, the stronger and more absorbent it is. Thinner grades are produced, down to 21 lb., but the wet strength additives used to strengthen light-weight paper reduce absorbency.

Roll towel production is faster than folded towel manufacture because cutting, folding and some packaging operations are unnecessary. Roll towels are rewound on cores to the specified length and slit to the specified width. They may or may not be wrapped before they are cased.

Dispensers

You must replace the dispensers when switching from folded to roll towels. Caution and a little research can help avoid future problems. Paper companies often supply “proprietary” dispensers designed to accept only their own rolls. Special notches in the roll or end pieces inserted in the core fit special holders in the dispensers. Proprietary dispensers lock users into future use of towels designed for the dispenser. This limits competition for all future bids. “Universal” dispensers are a better choice and all manufacturers make “universal” rolls to fit universal dispensers.

Universal dispensers for government use should be very durable. Metal cases with replaceable plastic covers work well because it is the cover that wears out over time. Transparent plastic covers allow maintenance personnel to see if a new roll is needed.

Dispensers should be designed to hold 400 feet of toweling at a minimum although 800 feet rolls are the optimum choice to reduce maintenance costs. Though costs may be higher, you may want a design that holds stub rolls (partial rolls that would otherwise be removed on scheduled maintenance visits). This saves money over the long term because dispensers are never empty and partial rolls are not thrown away.

A mechanism to adjust sheet length is useful too. You can have shorter sheet lengths in bathrooms where use is controlled. Dispensers in large public facilities are set to maximum length to help speed people through.

There are two ways to obtain dispensers:

Purchase: When you buy dispensers directly, you can control the type of dispenser supplied. However, you are responsible for installation and dispenser maintenance. Warranties tend to be short, one year, because there is no control over how dispensers will be treated on site.

Extended Contract or “Leasing”: Most companies will provide dispensers for “free” in three or five year contracts for paper towels. Dispensers are warranted for the length of the contract. Installation may be included in the contract price. The buyer owns the dispensers at contract end.

The cost of the dispensers is amortized over the contract period. Should the contract be broken, the buyer refunds the non-amortized amount to the supplier. Since nothing is really free, some companies add the cost of the dispensers to the cost per case of towels, others depend on future profits from extended towel contracts. In this case, long term contracts may have a price escalator to protect the supplier from rises in paper production costs.

EPA Designation

EPA designated paper towels with 40% postconsumer content in its original 1988 paper guideline. They were designated with the same recycled content in the May, 1995, Recovered Material Advisory Notice (RMAN) as well.

Proposed revisions to the Paper RMAN in March, 1995, attempted a change for paper towels to 100% recovered materials with 40% to 60% postconsumer content. New recycled content levels for other tissue products were proposed too. Refer to Table 6-II in Chapter 6: Recycled Content Standards. The proposed recycled content levels were challenged and may be adjusted in the final Paper RMAN due in 1996.

Minimum Recycled Content Standards

The current EPA standard remains 40% postconsumer content for commercial-industrial paper towels. The State of California includes paper towels in “other paper products” with minimum recycled content standards of 50% total recovered material and 10% postconsumer content.

Paper towels with 40% postconsumer content are available readily in the California market but the range of recovered materials varies widely. Manufacturers say they will resist a 50% postconsumer level unless it becomes a national standard.

As postconsumer materials are the targeted feedstock in paper products, and because most manufacturers will use additional recovered materials as a matter of course, buyers should use a postconsumer only standard. Those who wish to meet the letter of the California law can use 50% recovered material with 40% postconsumer to stay in line with national policy.

Recommended Postconsumer Recycled Content = 40%

Reduction Opportunities

Unbleached Paper: The first source reduction opportunity is with the paper itself. Some paper bleaching processes use chlorine which can pollute. If you currently use bleached towels, consider unbleached towels or semi-bleached towels. If you reduce bleaching, you reduce paper costs.

Roll Towels: Your towel vendors will help you calculate the potential waste and cost savings when you evaluate switching to roll towels. Nearly all have calculation models.

The example in Table 15-I shows how savings can be calculated, but do not count on identical results in your own case. Your own usage patterns may vary from those in the example and thus will affect the waste and cost savings. The example uses average values and a large roll towel. Savings would be less if smaller 400' towels are used.

The potential reduced waste, by weight, for paper towels is difficult to calculate without specific examples. Actual weight of the paper toweling and any pattern on the toweling affects roll weight. Packaging waste reduction depends on the types of cases used (weight of corrugated boxes or stretch film wrap) and the types of individual package and roll wraps.

Roll towels require less storage space because packaging is more compact. This additional benefit is hard to quantify but it may be extremely helpful in jurisdictions where space is at a premium.

There may be hidden barriers to changing to roll towels. Dispensers are not changed in government facilities unless they are broken or worn out. If your jurisdiction recently converted from one type of folded towel to another, you will find resistance to scrapping reasonably new dispensers. In a few cases, each time a dispenser is replaced for the first time in many years, the walls may have to be checked for asbestos contamination. This increases installation costs.

Scott and Wisconsin Tissue provided the calculation factors used in Table 15-I. Sizes and packaging are from the current Alameda County and Oakland paper towel specifications. Packaging estimates are based on 3,600,000 handwipes with folded towels packed 250 per case with 4,000 towels per case and 800 foot rolls packed 6 rolls to the case. Although all manufacturers state that cost savings are substantial, no actual cost quotes could be obtained.

**Table 15-I
CALCULATING WASTE SAVINGS FOR ROLL TOWELS**

Factor	singlefold	multifold	8" roll
size	9.5" x 10.25"	9.5" x 9.25"	8" x 16"
towels per handwipe	2	2	8" x 16"
square inches per handwipe	194.75	175.75	128
WASTE SAVINGS with rolls	34%	27%	-
towels per package/case	250/4,000	250/4000	800/6 rolls
handwipes per case	2,000	2,000	3,600
handwipes per package	125	125	600
cases per 3,600 handwipes	1.8	1.8	1
equivalent cases for 3,600,000 handwipes	1,800	1,800	1,000
PKG WASTE SAVINGS (# cases only)	80%	80%	-
labor cost per hour to fill dispensers	\$10.00	\$10.00	\$10.00
minutes per filling	2	2	2
cost per filling	\$.333	\$.333	\$.333
handwipes per filling	250	250	600
fillings per 3,600,000 handwipes (500 towels/filling, 2 towels/handwipe)	14,400	14,400	6,000
filling cost per 3,600,000 handwipes	\$4,795.20	\$4,795.20	\$1,998.00
LABOR COST SAVINGS	58.3%	58.3%	-

It is easy to put the towel quantities in Table 15-I into perspective. In busy public restrooms, maintenance staff put 500 folded towels into each dispenser every day. That is 2,500 towels per 5 day week or 130,000 towels (32 1/2 cases) per dispenser per year. In our example, 1,800 cases will serve 55.3 folded towel dispensers each year or 3,600,000 people who dry their hands once.

If maintenance staff used 800 foot roll towels to serve the same number of people at the same rate, they would fill dispensers 2.4 times per week and use just under 125 rolls (20.8 cases) per year.

With the factors in our example, one folded towel dispenser serves 65,000 pairs of hands per year while one roll towel dispenser serves 156,000 pairs of hands during the same time.

Cost

Recycled paper towels are less expensive or competitively priced with virgin alternatives. However, a few companies distribute primarily virgin towels to west coast markets and they may offer virgin towels at low cost when trying to retain market share.

Bleaching introduces costs in the manufacturing process and may add to environmental pollution depending on the bleaching process used. Semi-bleached and natural towels are less expensive than bleached towels.

All manufacturers state that roll towels are less expensive than folded towels but estimates vary. One estimate compared 500 foot rolls with multifold towels for 24% cost savings. Another estimate compared 800 foot rolls with singlefold and multifold towels. Savings were 39% and 30.5% respectively. Your vendors can provide potential cost savings based on your usage patterns.

SPECIFICATION ISSUES

Paper towel specifications include requirements for the paper toweling itself as well as for the type of dispenser.

Standard Specifications

Paper: Good paper towel specifications require no objectionable odor and include the recycled content standard, type of paper (bleached, semi-bleached or unbleached), basis weight, size, core size for roll towels and the number of feet per roll or towels per package. Since towels are ordered by case, many specifications include the number of towels or rolls per case.

ASTM Standard, D4431 Standard Specification for Paper Towels for Industrial and Institutional Use: This consensus standard is recycled content neutral, but it has more defined performance parameters than most buyers need. Future updates may include ASTM recycled paper definitions which may undermine EPA or California definitions.

Dispensers: Usually the dispenser capacity determines folded towel package size and roll diameters. Many dispensers hold 2 1/2 packages of 250 folded towels so maintenance staff can replenish towels easily even though dispensers are not empty when they are serviced.

Roll towel dispenser specifications are based on roll towel length in feet. You should specify 800 foot capacity.

American Disabilities Act (ADA): This 1991 federal law requires access for handicapped people that affects towel dispensers. Required installation height and placement do not affect dispenser design. However, the control that activates towel release must be operable with one hand without tight grasping, pinching or twisting and the force to operate controls must not exceed 5 pounds.

Most crank and lever roll towel dispensers do not meet ADA requirements. Automatic, pull-down activators do meet ADA but some designs may be more expensive. To save money, you can install one special dispenser close to the handicap-access sink in large facilities and use standard universal dispensers elsewhere.

Test Procedures

Paper towel and dispenser companies have extensive performance tests for their products but you do not need their test data unless there are problems. Simple tests in use will serve you well. If you want to change from a bleached to a semi-bleached or unbleached towel, or to evaluate roll towel dispensers, test them in the bathrooms used by your department and monitor responses from your co-workers.

If you need to test source reduction when switching from folded to roll towels, install roll dispensers in a bathroom where you can monitor how frequently the maintenance staff must service the dispenser compared with folded towel dispensers used elsewhere in the same building. This is a good way to engage maintenance supervisors in source reduction strategies.

Adjusting Specifications

Ownership Costs: You may want to estimate long term savings by evaluating ownership costs. Include costs for: dispensers, installation, labor for dispenser maintenance and towel replacement, storage requirements, towel supplies and disposal.

Experts say the least expensive option is purchasing dispensers outright. However, it may take a year or two to amortize the initial costs and you may lose warranties on the dispensers.

In “lease” arrangements, contracts are long term, generally three to five years. Suppliers warranty the dispensers for the length of the contract and generally provide maintenance and/or parts.

If you want to evaluate your suppliers' costs for dispensers and installation for the overall contract, you can break the bid down into parts. If you have adequate maintenance staff and want to install dispensers yourselves, seek an "installation allowance". You can determine during research whether this will affect warranties. Ask your bidders to supply separate prices for:

- paper towels only;
- dispensers only;
- dispenser installation;
- "installation allowance".

If you want to consider a long contract with dispenser "lease" arrangements that include installation and dispenser warranties, ask for the contract term and these separate prices:

- paper towels only;
- dispensers.

Towels: Include the recycled content standard in paper towel bids. Good specifications for roll towels also include:

- paper: unbleached (brown) or semi-bleached (white)
- basis weight: 25 lb. (sub 25)
- core size: 1 1/2 inches
- feet per roll: 400-800 feet with 800 feet the most cost-effective
- odor: no objectionable odor, wet or dry

Dispensers: When switching from folded towels to roll towels, you can specify the type of dispensers you want. Avoid accepting proprietary dispensers even if you are offered a great price. This will lock you into one type of towel for many years. Optimum dispenser specifications are:

- type: universal
- capacity: up to 800 feet roll with a 3.5 foot stub roll
- width: accepts standard 7 7/8 to 8 1/2 inch wide roll
- core holder: accepts standard 1 1/2 inch core
- activator: automatic by pulling towel for ADA sites, or lever
or crank with adjustable settings
- material: metal case with transparent, high impact plastic cover
- maintenance: easily replaced covers and other parts and
emergency feed knob so users can reactivate towel
delivery
- warranty: as long as you can get

Service Contracts: Maintenance service contractors will favor changing to roll towels because their long term towel and maintenance costs would be lower. They will want to cover their costs to change the dispensers though. It is a good idea to specify sturdy dispensers to save future replacement costs. You should expect higher costs the year that dispensers are installed.

USING AGENCIES

All departments use paper towels. They may be purchased through central contracts by the General Services agency or through maintenance contracts.

USAGE ISSUES FOR PAPER TOWELS

Towels must be adequately absorbent, hold together when wet and have no strange smell. Dispensers must be durable and need little maintenance.

SOURCES FOR PAPER TOWELS AND DISPENSERS

All recycled product directories have listings for recycled paper towels. Paper towels manufacturers and distributors offer dispensers and may provide contacts to you. At least one company has its own dispenser manufacturing division. Thomas Register lists towel dispenser sources which include many paper companies as well as dispenser manufacturers. Some dispenser companies avoid selling directly to users. Instead, they sell through paper companies and janitorial supply companies.

PLAYGROUND SURFACES

During the past ten years, concern increased about injuries at playgrounds. According to the U.S. Consumer Product Safety Commission, falls to the ground cause almost 60% of injuries. Surfaces to absorb shock help considerably although all sources acknowledge that all injuries from falls cannot be prevented no matter what surfacing is used. In addition, according to the American Disabilities Act, disabled people must have access to playgrounds.

APPLICATIONS

Resilient, shock absorbing playground surfaces made from recycled rubber meet all concerns. They replace concrete or asphalt and loosefill materials like bark, mulch, wood chips, sand and gravel. Called synthetic or unitary surfaces, there are two principal types:

Mats or tiles are made from ground rubber and binders. These may be single-density with the bottom layer molded into patterns to achieve necessary shock absorbing characteristics or dual-density with a bottom layer of medium density material. Tiles may be glued down or held together with linking systems.

Poured in place surfaces are seamless. Ground rubber and binders are trowelled into place and cure to a smooth surface.

Similar Products or Uses

Many of the companies that produce playground surfaces make other recycled rubber products as well. While specifications and safety requirements differ, you can seek recycled rubber in:

- athletic surfaces, gym floors, running tracks, ice rink surfaces;
- mats for stairways and pathways;
- interior floor mats, anti-fatigue mats, anti-slip mats.

ATTRIBUTES

Nearly all rubber playground surface manufacturers use postconsumer tire buffings as the basic resilient material. Polyurethane and other types of binders hold the ground rubber together and various adhesives can be used to hold the rubber matting in place. Some companies use brightly colored top layers made with virgin rubber or PVC. Everyone acknowledges that these top layers are

aesthetic only. No loss of performance occurs when darker, recycled rubber surfaces do not have the virgin, colored layer.

Some companies use preconsumer rubber trimmings. Tire companies also divert internally generated scrap to their playground surface divisions. However, quantities of internal scrap and preconsumer material are rarely more than 10% of the total. Tire buffings from the retreading industry predominate as the material of choice.

Sneaker rubber is another source of recycled content. Nike, the athletic shoe manufacturer, started the Reuse-a Shoe program in 1993. Preconsumer, defective athletic shoes and postconsumer, worn-out sneakers are shredded and separated into rubber and "fabric-other". The fabric fluff is given away and the rubber goes to Dodge-Regupol for special-order playground surfaces. Although most of the sneaker rubber today is preconsumer scrap, the ability to use it stimulates postconsumer collection programs.

As an example, Project Playground, a group concerned with playground safety, helped the Oakland Unified School District obtain Reuse-a-Shoe surfaces for more than 50 playgrounds in 1995. Fundraising efforts included collecting large quantities of used sneakers from school children and community residents.

EPA Designation

EPA designated plastic or rubber playground surfaces and running tracks made with 90% - 100% postconsumer material in May, 1995. Purchasers can specify other materials but, if they select rubber or plastic, they must use the recommended recycled content levels. The sneaker-based material was not available when EPA research was completed. Buyers should seek an opinion from EPA regarding its use on federally funded projects.

Minimum Recycled Content Standards

According to EPA, recycled content standards apply to the dry weight of the raw materials exclusive of any additives such as adhesives, binders or coloring agents. EPA based its recycled content levels on practices by 20 companies. Manufacturers that use preconsumer as well as postconsumer rubber can meet the 90% postconsumer level.

The 90% EPA postconsumer content level is flexible enough for California specifications and the range of product types. In this special case, expanding the standard to include recovered sneaker material will stimulate markets for postconsumer sneakers. The following standard applies to the dry weight of rubber, not to the binders, adhesives or coloring agents, which may weigh up to 30% of the installed playground surface.

**Recommended Postconsumer Recycled Rubber Content
and/or Recovered Sneaker Material = 90%****Reduction Opportunities**

Resilient rubber surfaces have long durable lives. Warranties range one to ten years but five years is most common. Loosefill materials, such as gravel or wood chips, scatter away from the protected surface and need more frequent replacements and maintenance than rubber surfacing.

Construction Specification Institute (CSI) Divisions

Recycled construction product directories use various CSI headings to list playground surfaces and other types of rubber mats. Some examples are:

02540 SITEWORK - PAVING AND SURFACING - Synthetic Surfacing
02860 SITEWORK - SITE IMPROVEMENTS - Playfield Equipment & Structures
09665 FINISHES - Resilient Flooring - Sheet
09700 FINISHES - Special Flooring

Cost

Darker color surfaces of postconsumer rubber are less expensive than surfaces with brightly colored, virgin surface treatments. Nearly every manufacturer meets the postconsumer rubber standard. Sneaker-based surfaces are cost-competitive with rubber counterparts. All recycled alternatives are competitive with virgin rubber products.

Rubber surfaces cost more initially than loosefill material but maintenance and replacement costs are lower. Rubber may cost less in the long term.

SPECIFICATION ISSUES**Legal and Regulatory Requirements**

California Law - SB 2733 Playground Safety: The Department of Health Services is developing regulations for this 1990 law. In the fall of 1995, working groups were writing text. The law requires regulations to meet the standard of care imposed by courts of law on playground operators and, at a minimum, impose guidelines and criteria at least as protective as guidelines from the U.S. Consumer Products Safety Commission. The law requires all public state, county, city, county-city and district agencies operating playgrounds to upgrade their playgrounds to meet the regulations.

U.S. Consumer Product Safety Commission (CPSC): This organization publishes the Handbook for Public Playground Safety and several fact sheets about playground surfaces. These address shock absorption during falls. CPSC states that asphalt and concrete are unacceptable playground surfaces and that grass and turf should not be used because wear and environmental conditions reduce the ability to absorb shock. Loosefill materials are allowed.

American Disabilities Act (ADA): In 1991, Federal law (CFR 28 Part 36) required access to playgrounds for the mobility-impaired. The California Department of Parks and Recreation advised that, after 1991, regulations must require all types of play activity in new or redone play areas to be accessible to the disabled. According to research for this project, compacted sand and gravel do not meet ADA objectives. People with impaired mobility, on crutches or in wheelchairs need firm surfaces.

Standard Specifications

Guidelines, rather than specifications, establish key criteria for playground surfaces. They measure shock absorption from falls to avoid critical head injuries. To date, no accessibility standards have been published although at least one manufacturer uses its own tests to measure wheelchair rolling resistance and wheelchair starting force.

The CPSC Handbook for Public Playground Safety and ASTM standards describe the major shock absorption issues including:

- Critical Height - an approximation of the maximum fall height from which a life-threatening head injury would not be expected to occur.
- Highest Accessible Part of the Equipment - the height above the playing surface.
- Head Injury Criteria (HIC) - peak levels of deceleration and duration of the most critical deceleration pulse. HIC must be less than 1,000.
- G-Max - the maximum deceleration experienced during an initial impact. "G" means the acceleration into gravity at the earth's surface at sea level (32 f/s or 9.8 m/s). G-Max must be less than 100.

Test Procedures

All guidelines reference a key American Society of Testing and Materials (ASTM) standard.

ASTM F1292-93 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment: This standard addresses all types of material used to cushion falls from playground equipment. It is a procedure to evaluate shock absorbing properties of playground surfacing such as G-Max and HIC.

Adjusting Specifications

When you seek rubber playground surfaces, you should insert the minimum recycled content standard in your specifications. Use the criteria established by the U.S. Consumer Product Safety Commission for playgrounds and request test data for HIC and G-Max. You should evaluate manufacturers' warranties as well and seek products with long useful lives to reduce maintenance and replacement costs.

USING AGENCIES

School, parks and recreation agencies are the most frequent users of playground surfaces.

USAGE ISSUES FOR PLAYGROUND SURFACES

Safety is the most critical issue. Once safety criteria are met, the next concern is durability and maintenance costs. Fund raising efforts may play a part in Alameda County communities where there is little money to upgrade playgrounds. Programs that collect used sneakers proved popular in Oakland and they justify allowing preconsumer sneaker material in the recycled content standard at this stage.

SOURCES FOR RECYCLED RUBBER SURFACES

Most recycled product source lists include recycled rubber surfaces, mats and similar products. Examples include:

Recycled Product Guide	Surfacing, Playground Surfacing - Athletic
EPA	Parks and Recreation Products Containing Recovered Materials - Playground Surfaces and Running Tracks
Scrap Tire Users Directory	Markets - Athletic/Recreational Surfaces
McRecycle Directory	02540 CSI Synthetic Surfacing - Playfield Surfaces
EcoLiving Sourcebook	various CSI categories

PLASTIC FOOD SERVICE TRAYS

Plastic trays can be reusable or disposable. Most reusable trays are wiped clean. Some withstand dishwasher temperatures. Disposable trays can be paper or foamed polystyrene.

APPLICATIONS

People use plastic trays wherever food is served cafeteria style. Examples include hospitals, schools, museums and recreational facilities. Prison food service contractors use special types of trays designed for their food delivery systems.

Reusable trays represent an opportunity to reduce waste when food is served. All disposable dishes and silverware, as well as trays, can be replaced when dishwashing systems are in place.

Only Alameda County and the East Bay Parks District reported buying disposable plates and containers. The annual dollar values were very low, \$13,500 and less than \$5,000 per year respectively. No one reported buying trays. However, Alameda County has food service contracts in place for its jails. Food is delivered directly to individuals. One system uses paper trays and dishes with preconsumer recycled content. The other system uses a durable, reusable polycarbonate tray.

Similar Products or Uses

Durable products include washable dishes although you will not find recycled content. Kitchen products, like boxes to bus dishes from tables and dish storage racks, do contain recycled plastic. Disposable paper dishes with preconsumer content are in the market. Recycled foam polystyrene is used for a few food packaging applications like egg cartons. Other grades of recycled polystyrene are used in non-food packaging from peanuts to shapes for computer equipment.

ATTRIBUTES

The characteristics of food service trays vary according to the material and how they are used.

Durable, Reusable Trays

Durable food service trays designed for the fast food industry work just as well in government facilities. Good tray designs have stacking lugs to allow air

circulation when trays are drying. They should be stain and odor resistant and have a textured surface to mask scratches. Common sizes, which may vary a fraction of an inch from supplier to supplier, are:

10" x 14"

12" x 16"

14" x 18"

12" x 17" with handles

Trays with recycled content are typically in darker colors like brown, blue and black. Trays made with virgin plastic may have more color variety but aesthetic considerations are not critical for such utilitarian products.

The plastics used in durable plastic trays are high impact polystyrene (PS) and polypropylene (PP). At least one company uses postconsumer PP and PS in impact resistant and dishwasher safe trays. Potentially, it could expand recycled PP use but there are few collection systems for PP plastic items in place today. The trays are permanently marked to identify the recycled plastic and they are recyclable when their service life is over.

McDonald's stimulated manufacture of durable recycled plastic trays as part of its restaurant source reduction and recycled product program. At least three companies supply McDonald's, some with custom trays, others with trays available to other customers.

Disposable Trays

In situations where disposable trays must be used, recycled content should be sought as a matter of course.

Paper: Paper trays must meet Food and Drug Administration (FDA) criteria. This limits recycled content to preconsumer paper from very clean sources. All the incoming feedstocks at one company are 100% preconsumer material. Paper trays can be composted along with food wastes.

Polystyrene: Polystyrene trays must meet FDA criteria as well. At least one company secured an FDA letter of non-objection to using postconsumer material. To avoid potential contamination, used trays are recycled in separate systems from other items by polystyrene recycling facilities. To assure feedstocks, closed loop collection and purchasing systems are in place in school districts around California, including some in the Bay Area, and the Los Angeles Unified School Districts.

EPA Designation - none

Minimum Recycled Content Standards

There are no precedents for recycled content in food service trays. Content standards are based on known practices by a few manufacturers.

Recommended Recycled Content Standards

Durable Plastic	=	25% Postconsumer Plastic
Disposable Polystyrene	=	25% Postconsumer Plastic
Disposable Paper	=	80% Preconsumer Paper

Reduction Opportunities

The switch to durable food service accessories requires a dishwashing system. Opinions vary about the costs of washing to avoid the costs of disposables. There is no question that washing reduces waste.

When using disposable systems cafeteria style, food can be placed directly into a compartmented tray to eliminate disposable dishes. This is common practice in schools and jails.

Cost

Durable, recycled plastic trays are priced competitively with virgin plastic counterparts. The same is true for disposable plastic and paper trays.

SPECIFICATION ISSUES

Trays must be designed to work efficiently in the food service system.

Standard Specifications

The Food and Drug Administration allows recycled content in food contact products through letters of non-objection. Some recycled content food contact items, such as compartmented trays, meet FDA criteria.

The National Sanitation Foundation (NSF) divides durable food service items into three categories: food-zone (direct food contact), splash-zone (countertops and trays to hold dishes) and non-food zone. NSF will not certify recycled plastic items for food-zone products but recycled plastic is not an issue for splash-zone items like trays used to hold dishes.

Durable trays should be “dishwasher safe” when dishwashers are used. This means that trays will not buckle or lose shape when exposed to dishwashing temperatures and detergents.

Manufacturers of disposable food contact trays developed standard sizes and compartment configurations. Since standard products cost less than custom products, it makes sense to specify the standard product. A “school lunch” tray with five compartments is most common and variations between manufacturers are minor.

Weight may be used to specify disposable trays, but be careful to distinguish between paper and foamed polystyrene. A paper tray weighs about 30 grams or about 30 pounds per 500, plastic weighs about 7.5 to 10 grams or 8 to 11 pounds per 500.

Test Procedures

Manufacturers use internal deflection tests to be certain that disposable trays will hold food securely. Essentially, 4 ounce weights are placed in the top left and right hand compartments. Trays that do not buckle or break meet performance requirements.

Adjusting Specifications

You will want to use standard tray sizes and compartment configurations to avoid the costs of custom orders. The recycled content standard should be included in tray specifications and in food service contracts where disposable trays and reusable PP or PS trays are used. Reusable trays made with other materials, such as polycarbonate, do not contain recycled content.

In cases where food is placed directly on the tray, buyers should ask suppliers to provide assurance that recycled content is acceptable to the Food and Drug Administration. If you have reasons to be concerned about performance, request internal deflection test results.

USING AGENCIES

Parks and General Service agencies may order trays. Museums may have their own department in some jurisdictions. Hospitals and schools often have their own purchasing systems that are separate from city and county administration.

USAGE ISSUES FOR TRAYS

Durable trays must have long service lives and withstand or hide scratches. Depending on the system, they must be dishwasher safe or easy to wipe clean.

Disposable trays must hold a reasonable amount of food without bending, buckling or spilling. They should be recyclable or compostable in the jurisdiction’s system because they represent a large quantity of waste.

SOURCES FOR RECYCLED FOOD SERVICE ITEMS

The Recycled Products Directory lists suppliers of all types of food service items. The only source identified for durable trays with recycled content, the American Plastics Council Source Book, lists serving trays under miscellaneous consumer items.

PLASTIC LUMBER BENCHES

Benches were one of the earliest plastic lumber products offered. They are available now in many variations.

APPLICATIONS

Plastic lumber benches are good substitutes for every type of outdoor bench ordered by governments. They are good at parks, swimming pools, beaches, building entrances and at bus stops or other transportation depots. Plastic lumber works wherever people are lightly clad because it does not splinter.

Similar Products or Uses

Benches are made with recycled plastic profiles that have many other uses. Some examples include:

- picnic tables
- landscaping lumber
- car stops
- decking
- outdoor boardwalks

ATTRIBUTES

Plastic lumber is extruded in long profiles. Non-rectangular pieces are called shapes. Benches are made with plastic lumber slats and plastic shape bases or the plastic lumber is attached to supports made with other materials such as metal or concrete.

Plastic lumber was invented to use recycled plastic. Many producers use plastic bottles from household collection programs, others use a combination of postconsumer material and preconsumer scrap.

There are as many variations of plastic lumber as there are manufacturers. It may contain a single plastic, like high density polyethylene (HDPE), or a combination of thermoplastic resins. Some producers intentionally include non-plastic fillers and reinforcing materials, others use systems that can accept plastic contaminants like paper and metal scraps. Some plastic lumber is solid, some is designed with stiff outer edges and a honeycomb of air pockets in the center. Each product has its own performance characteristics.

Plastic lumber is extruded in many of the same dimensions as conventional lumber. A wide variety of dimensions is used in benches. Selection of thickness

and width depends on the bench design. Plastic lumber is easy to cut and fasten with conventional equipment. Ultraviolet stabilizers are used when necessary for certain climates and light conditions.

You can expect less maintenance because plastic lumber does not rot, it resists insects and it does not need painting. Plastic is harder to carve or write on so graffiti artists look elsewhere to display their work.

Color is not a surface treatment but is the same throughout the cross section. Location does affect the choice of color though. Light-colored plastic lumber reflects heat so it is most suitable for sunny locations. Of the metal, wood and plastic benches in a sunny plaza in Tucson, AZ, only the pale gray plastic bench was cool enough to sit on at mid-day. On the other hand, picnicking families avoided a dark brown plastic lumber picnic table in a sunny Pennsylvania park because it was hot to the touch. Either color is fine in the shade.

Unlike wood, metal and concrete counterparts, plastic lumber can sag if it is not supported properly because plastic “creeps.” Plastic lumber needs more supports over shorter spans than competing materials. Bench manufacturers are aware of this and use appropriate designs.

Recycled Content

The new plastic lumber industry is beginning to define itself. Plans to date will limit “plastic” lumber and shapes to products with more than 50% plastic in the feedstocks. This may eliminate some plastic and wood combinations. To be called “recycled-plastic” lumber or shapes, 90% of the plastic in the product must be recycled plastic which includes both postconsumer and preconsumer material.

EPA Designation - None

EPA is evaluating plastic lumber for potential designation.

Minimum Recycled Content Standards

Manufacturers say that plastic lumber contains high proportions of postconsumer material. The recommended postconsumer standard accommodates plastic only, plastic and wood, plastic with other fillers and reinforced plastic variations.

Recommended Postconsumer Recycled Content = 50%

Reduction Opportunities

Plastic lumber is said to last longer than traditional wood and to require less maintenance. The research to date supports this position if recycled plastic lumber is installed properly. Some of the earliest decking projects installed in the mid-70's remain in excellent condition. Other projects failed because engineering characteristics were evaluated poorly or not at all.

When ordering benches or bench slats, you should consider ownership-cost evaluations which take into account: purchase price, supplies, maintenance, durability and ultimate disposal costs.

Construction Specification Institute (CSI) Titles and Numbers

Most construction product directories list recycled plastic lumber items in Division 2, Sitework under Section 02800, Site Improvements. Benches and Tables are in Subsection 02870, Site/Street Furnishing.

Cost

Recycled plastic lumber costs more than traditional wood like Douglas fir. However the total lifetime cost of the product is less expensive when durability and maintenance are factored into the initial purchase price.

SPECIFICATION ISSUES

Color, ultraviolet light stabilization and sufficient support to counteract creep are the key issues when selecting plastic lumber benches. Manufacturers will provide assembly instructions when necessary so that completed benches will have the required structural strength.

Standard Specifications

There are no standard specifications to date. King County, WA, uses the following criteria in its general plastic lumber specification:

- new and latest model design from a company regularly manufacturing the product
- recycled content requirement
- appearance: no discernible contaminants
- color
- size
- density by % of air voids (as necessary for the specified item)
- UV inhibitors (as necessary for the specified item)

Test Procedures

Despite its similarities to conventional wood, plastic lumber is not the same thing. Familiar characteristics cannot be measured the same way.

ASTM is developing a range of test methods just for plastic lumber. Progress is slow but improving. No test method is final to date. Methods underway include:

- Compressive Properties - to measure strength under compression
- Flexural Properties - to measure bending strength
- Relative Density - to measure uniformity
- Creep - to measure deformation under a constant load or sagging
- Fasteners - to measure nail or screw pullout
- Flammability/horizontal burning - to measure slow burning
- Flammability/brand - to measure ignition from hot objects like burning charcoal

Adjusting Specifications

Since bench design has so many variables, it is difficult to adjust existing specifications. Specify plastic lumber benches rather than other materials. Include the minimum recycled content standard, color, UV inhibitors if needed, density by percentage of allowed air voids if necessary, size and quantity. Require certification of recycled content. Until test methods are completed, they cannot be used in specifications.

Although some people raise concerns about fire, plastic does not burn much differently than wood. According to Underwriters Laboratories, there are no flammability requirements for outdoor applications. There is no reason to apply flammability restrictions to plastic lumber benches if there are no similar requirements for wooden counterparts.

Many plastic lumber manufacturers provide engineering assistance for specific applications. Bench manufacturers that do not make the plastic lumber can obtain this help, so can government buyers with significant projects underway. Request information about this service during the research phase of your plastic lumber project.

USING AGENCIES

Parks and Recreation, General Services and Public Works agencies are the principal users of recycled plastic benches and related products.

USAGE ISSUES FOR PLASTIC LUMBER BENCHES

The issues for plastic lumber benches are little different than for conventional wood, concrete or metal benches. They must withstand abuse by the public and be easy to maintain. Special concerns for plastic lumber include: ultraviolet light degradation in hot, sunny locations and creep, or sagging of bench slats between supports.

SOURCES FOR RECYCLED PLASTIC LUMBER

All standard directories of recycled products and recycled construction products include plastic lumber and most identify which companies offer benches. The EcoLiving Sourcebook database provides details about benches from eight manufacturers.

Two specific sources list recycled plastic lumber producers only. Details about product lines are sketchy at present:

Plastic Lumber Trade Association Geographic Listing of Members

The Resource Recycling Directory of US and Canadian Plastic Lumber Producers

RE-REFINED LUBRICATING OIL

“Lubricating oil doesn’t wear out, it just gets dirty,” say all the experts. Recent improvements in re-refining technology produce base stock that equals its virgin counterpart in quality.

Two of the four re-refining facilities are in easy shipping range for northern California communities. Evergreen Oil, Inc. is in Newark, CA and Mohawk Lubricant is in North Vancouver, British Columbia. Safety-Kleen operates two facilities in East Chicago, IN and Breslau, Ontario.

Alameda County, Hayward and the City of Alameda use re-refined oil successfully. Oakland plans to have it on contract soon. The federal government, U.S. Postal Service, Snohomish County, WA and many local government automotive fleets use re-refined lubricating oil as well.

APPLICATION - Automotive Engine Lubricating Oil

Lubricating oil includes petroleum products with many applications in the automotive and industrial categories. The largest volume application in automotive oil is automotive engine lubricating oil, also called automotive engine crankcase oil. It is used to reduce friction in engine parts.

Similar Products or Uses

The following lubricants can be made with re-refined oil base stock:

AUTOMOTIVE OIL

Automotive Engine Lubricating Oil
Transmission Fluid
Hydraulic Fluid
Gear Oil

INDUSTRIAL OIL

Hydraulic Fluid	Compressor Oil
Turbine Oil	Refrigeration Oil
Bearing Oil	Railroad Diesel Oil
Gear Oil	Natural Gas Engine Oil
Process Oil	Aviation Oil
Marine Oil	Grease
Metalworking Oil (removing, forming, testing, protecting)	

This section uses “lubricating oils” or “re-refined oils” to mean all types of these lubricants.

The State of California, in Section 10405 of the Public Contract Code related to recycled oil markets, defines lubricating oil to be:

any oil intended for use in an internal combustion crankcase, transmission, gearbox, or differential of an automobile, bus, truck, vessel, plane, train, heavy equipment, or machinery powered by an internal combustion engine.

ATTRIBUTES

Lubricating oils contain base stock and up to 20% additives to inhibit oxidation and degradation, improve viscosity, prevent foaming and provide fire retardation. The base stock contains the re-refined oil.

Technology

Current re-refining technology uses vacuum distillation and hydrotreating to clean used oil collected in recycling programs. Each of the four steps in the process produce a different end product. Base stock from this process meets the same specifications as virgin base stock.

- Dehydration - removes water
- Fuel Stripping - removes light fuel and some solvents
- Vacuum Distillation - evaporates the lubricating oil fraction from the remaining used oil leaving a heavier asphalt byproduct containing metals, dirt, oxidants and additives which is sold as an asphalt extender
- Hydrotreating - eliminates compounds causing color, odor, heavy metals and oxidation using pure hydrogen and a catalyst

Blenders use the re-refined base stock just as they do virgin base stock, with the same additive packages, when they prepare lubricating oils to meet specifications. Some common lubricating oils in the consumer market contain re-refined oil whether or not the label identifies it.

Warranties

For many years, government personnel avoided re-refined lubricating oils because they were not certain automotive warranties would be honored if they were used. In 1993 and 1994, EPA obtained statements from the three major

automobile manufacturers to eliminate this concern. Each statement acknowledges that re-refined oil can meet recommended oil specifications. Re-refined oil must meet industry standards, however. 1994, 1995 and 1996 gasoline powered vehicles require API Service "SH" designated oil or CF-4 or CD11 for heavy duty diesel engines.

EPA Designation

EPA designated lubricating oils with 25% re-refined oil base stock, including: engine lubricating oils, hydraulic fluids and gear oils, in the June, 1988, procurement guideline. The May, 1995, Recovered Material Advisory Notice (RMAN) recommended specifications for lubricating oils made with re-refined base stock. Refer to Standard Specifications in this product section.

Minimum Recycled Content Standards

Used oil is postconsumer material. EPA uses 25% as its minimum recycled content level for re-refined lubricating oil.

The State of California requires recycled automotive lubricants, including but not limited to crank case oil, engine oil, transmission fluid and power steering fluid, to contain a minimum of 70% re-refined oil to count toward the State's mandated goals or to qualify for the State price preference.

The recommended minimum content standard refers only to the base oil fraction. It is based on the higher California 70% standard because products with 70% re-refined base oil are available on the west coast.

Recommended Postconsumer Recycled Content = 70%

Reduction Opportunities

You will not find many ways to use less lubricating oil if you maintain engines correctly. However, proper maintenance may be viewed as a source reduction activity because it extends the life of a durable product.

Maintenance staff should avoid throwing away small amounts of new lubricating oil. Also, by ordering lubrication oils in bulk containers instead of small cans, you can reduce packaging waste significantly.

Cost

Producers of re-refined oil state that it is less expensive than virgin alternatives. Local California blenders acknowledge that re-fined oil is less expensive when compared with major virgin brand names, but they may charge more for products

they blend themselves. This is because they have additional costs for labels and for segregating virgin and re-refined tanks.

The U.S. Postal Service (USPS) uses re-refined lubricating oil to meet environmental objectives and because it is less expensive. The USPS has a closed loop system which saves up to 5 cents per gallon. The vendor collects used oil and replaces it with re-refined product.

SPECIFICATION ISSUES

Users cite American Petroleum Institute (API) and United States Military (MIL) specifications most frequently for lubricating oils. API and MIL specifications accommodate re-refined lubricating oil. Engine oils must be licensed to meet current API designations.

Standard Specifications

EPA recommends the following specifications with a minimum 25%, or highest percentage available, of re-refined oil. EPA stipulates current version or current category in case of specification changes.

Engine Lubricating Oils

A-A-52039 Commercial Item Description - Lubricating Oil, Automotive Engine, API Service SG

Internal Combustion Engine

API Engine Service Category SF - 1980 Gasoline Engine Warranty Maintenance Service

A-A-52306 Commercial Item Description, Lubricating Oil, Heavy Duty Diesel Engine (for wheeled vehicles only)

API Engine Service Category CC - Diesel Engine Service

MIL - L-2104, Lubricating Oil, Internal Combustion Engine, Combat/Tactical Service

API Engine Service Category CD - Diesel Engine Service

MIL-L-21260D, Lubricating Oil, Internal Combustion Engine, Preservative and Break-in

MIL-L-46167B, Lubricating Oil, Internal Combustion Engine, Arctic

Hydraulic Fluids

MIL-H-5606E, Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance

MIL-H-6083E, Hydraulic Fluid, Petroleum Base, For Preservation and Operation

Gear Oils

MIL-L-2105D, Lubricating Oil, Gear, Multipurpose

Test Procedures

Numerous users conducted engine sequence tests and fleet tests in the past. These are not necessary now. API licensed re-refined oils must pass the same tests as virgin oils, including: cold start, pumpability, rust and corrosion, engine wear, high temperature oil thickening and phosphorus.

Adjusting Specifications

EPA requires local procuring agencies to specify re-refined lubricating oil actively, not just “allow” it in specifications. California law requires state procuring agencies to buy lubricating oils from the seller with the highest percentage of re-refined oil and to maintain an affirmative buying program. The California State model is good for local agencies too:

- Describe the preference for re-refined oil in publications used to solicit bids from suppliers;
- Describe the re-refined oil preference at bidders conferences;
- Discuss the preference for re-refined oil in bid solicitations and invitations for bids;
- Inform trade associations about the preference for re-refined oil.

USING AGENCIES

All agencies that maintain vehicles and engines can use re-refined oil.

USAGE ISSUES FOR RE-REFINED LUBRICATING OIL

Now that warranty concerns have been eliminated, there are no special concerns for re-refined lubricating oil. It substitutes for virgin base stock. However, buyers should track contract compliance carefully. Some suppliers are known to deliver virgin products to users despite contract provisions.

SOURCES FOR RE-REFINED LUBRICATING OIL

Most recycled product directories list sources for re-refined lubricating oil. The Safety-Kleen Oil Recovery Company circulates the Re-Refined Lubricants Buyers Guide which contains geographic listings for distributors of its own and its competitor’s products. See Appendix III: Resources.

SOIL AMENDMENTS - COMPOST

Compost has many uses in landscaping and soil conditioning. As research continues, the range of applications grows.

At least eight Alameda County jurisdictions use compost or mulch made from their own materials in public construction projects today, whether or not their formal construction contract specifications have been adjusted. Additional compost capacity in the County is under consideration, including a co-compost facility.

APPLICATION - Soil Amendment in Blended Topsoil

Soil amendments improve the quality of soil for landscaping in new building and road construction projects and in parks.

Similar Compost Applications

Many other uses for compost exist. Guidelines have been developed for most of the following uses:

- soil amendments for: reforestation, turf establishment, vegetable crop production, planting beds and marginal soils;
- growing media for: horticultural substrate component and sod;
- mulch for: gardens and plants, soil and erosion control.

ATTRIBUTES

Compost generally refers to decomposed yard material but other materials like animal manure and chipped wood scrap may be used. Co-compost includes human sewage sludge composted in combination with the other organic materials.

EPA Designation

In May 1995, EPA designated compost made from yard trimmings, leaves and/or grass clipping in such applications as landscaping, seeding of grass or other plants on roadsides or embankments, as nutritious mulch under trees and shrubs, and in erosion control and soil reclamation.

Minimum Recycled Content Standards - None

There are no minimum content standards for compost because the proportion of compost to other soil components may vary significantly according to the application and the type of material used to make the compost.

Reduction Opportunities - None**Construction Standards Institute (CSI) Division**

Compost appears in various section headings under the 02900, Landscaping, division.

Cost

Compost is competitive in price with other materials used as soil amendments and may, in some cases, be less expensive.

SPECIFICATION ISSUES

Compost is specified rarely for soil amendments or other appropriate applications by Alameda County jurisdictions according to the construction contracts reviewed by the project team. This should change as using agencies learn more about compost and its availability.

Soil Amendment and Mulch Specifications

Topsoil specifications typically include decomposed organic matter as well as various percentages of clay, silt, fine sand, coarse sand and gravel. Agricultural or sandy loam is specified as well. Agricultural suitability requirements may include standards for pH, salinity, sodium, boron, potassium, calcium and magnesium. Contractors order topsoil that meets specifications or blend the required materials on site.

The soil amendment specified most frequently in Alameda County jurisdictions was nitrogen and iron-treated redwood sawdust. Soil reports determine the proportion. In some cases, bid documents describe the proportions of organic material, fertilizer and other additives. Redwood, fir or pine bark were specified for mulch.

The California *Standard Specifications for Public Works Construction (Greenbook)* was not referenced directly but may have been adapted to construction contract specifications. The 1994 *Greenbook* identified three types of Organic Soil Amendments (212-1.2.4):

Type 1 - ground or processed wood product derived from redwood, fir or cedar sawdust or fir or pine bark with gradation, nitrogen, salinity and wetability requirements.

Type 2 - organic composite derived from sewage sludge processed for agricultural use with nitrogen and gradation requirements.

Type 3 - hay and stable bedding processed for use as the growing medium for commercial mushroom production with nitrogen and gradation requirements.

Six types of mulch appeared in the *Greenbook* (212.1.2.5). Three types were identical to soil amendments. The other three were peat, fir bark chips and straw.

Compost Guidelines and Specifications

In recent years, guidelines and regulations have been developed to assist potential users of compost.

California Compost Quality Standards: The California Compost Quality Council (CCQC) continually upgrades its voluntary compost standards. These are based on the proposed guidelines introduced by the California Integrated Waste Management Board in June, 1995. Information for users in the Fall, 1995, CCQC version included: moisture content, particle size, bulk density, organic matter content, salinity, pH, and total nitrogen, phosphorus and potassium content. The standards also include recommendations regarding weed seed inviability, pathogen reduction and trace element (heavy metal) restrictions.

California Composting Regulations: The Title 14, California Code of Regulations, Division 7, Article 7, Environmental Health Requirements describe compost product requirements. These include: maximum acceptable heavy metal concentration limits and pathogen reduction requirements. Heavy metal limits match EPA Part 503 pollutant concentration regulations for sewage sludge with the exception of molybdenum.

The Composting Council: This national organization, based in Alexandria, VA, issues compost parameters and compost use guidelines. Quantified parameters include: pH, soluble salt content, nutrient content (minimally nitrogen, potassium, phosphorus), water holding capacity, bulk density, moisture content, organic matter content and particle size. For trace elements/heavy metals, a qualified

parameter is used, such as a statement that product meets California requirements. Work continues on parameters for growth screening and stability.

Compost Use Guidelines include: description of material/compost required, methods of use or application, preferred compost parameters, guidelines for use of related materials, long term maintenance and health/safety conditions. The Blended Topsoil Component guideline is most applicable to current government specifications for soil amendments. As of June, 1995, other soil amendment guidelines include: silvaculture (reforestation), turf establishment, vegetable crop production, planting beds and marginal soils. The remaining compost use guidelines include: horticultural substrate (growing media) component, growing media for sod, garden and plant mulch, and soil mulch for erosion control. Additional guidelines are underway.

CalTrans Mulch Specification: In May, 1995, the CalTrans Engineering Service Center, Office of Materials and Engineering and Testing Services, circulated a memorandum about mulch for erosion control with a draft specification. According to the memorandum, mulch is used in landscaping by several Districts to prevent erosion, conserve water, reduce the potential of fire and reduce herbicide use.

CalTrans encourages the use of mulch for erosion control and states that two inches of mulch is sufficient for erosion control on highway projects and three to four inches of mulch will reduce weed growth. CalTrans further encourages use of composted materials to reduce weed seeds and pathogens. The draft mulch specification includes the parameters for composted urban green material.

Adjusting Specifications

Procuring agencies should review their specifications and remove restrictions that would discourage use of compost. For example, where other materials are named, like redwood sawdust, specify compost instead of, or in combination with, the named materials.

Compost-topsoil can be specified as one of the primary topsoil mixes in numerous applications. Actual specifications vary according to the application and local soil conditions. Published guidelines and regulations provide information for compost specifications.

There are no minimum content standards for compost. The key precursor materials, yard and landscaping waste and sewage sludge are generally considered postconsumer. The percentage of compost to other materials may vary from one geographic area to another and also may vary according to the materials used to make the compost itself.

USING AGENCIES

Typical county and city government agencies that would specify compost include: Public Works, Parks and Recreation and General Services. These agencies may have different names in individual jurisdictions.

USAGE ISSUES FOR SOIL AMENDMENTS

If compost is available in your jurisdiction, work with your soil engineers to determine the optimum mixture in topsoil and other applications. Usually, compost suppliers can supply test data. It may be that compost can be substituted directly for the organic material you use now. If nutrient levels need adjustment, review and revise the fertilizer specifications.

COMPOST SOURCES

Contact your local recycling coordinator for information about compost produced in your community. Recycled product and construction product directories may also list commercial sources.

TRASH CANS AND ROLLING CARTS

Trash cans are used to collect refuse. Also called litter cans, ash cans, refuse cans, carts or containers, they can be made from steel, plastic, paper or wood.

APPLICATIONS

Every jurisdiction buys trash cans for their rest rooms, offices and other facilities as well as for recreational sites. Communities with automated residential waste collection services provide rolling plastic carts with lids to their residents. Collection vehicles hold the cans with mechanical arms to empty them into the body of the collection truck. All trash cans for this use must be compatible with the collection vehicle.

Similar Products or Uses

Molded plastic products like drums, pails, mop buckets, wastebaskets, indoor recycling containers, rolling refuse containers, outdoor trash and recycling containers and durable shipping/storage containers can contain postconsumer resin. Paperboard counterparts can contain postconsumer fiber.

ATTRIBUTES

The attributes depend on the type of material.

Metal Cans and Carts

All steel trash cans and drums contain recycled content. Manufacturers use sheet steel like the sheet used in appliances and automobiles. Sheet steel is rolled out from sections of continuously cast steel slabs produced in basic oxygen furnaces. Unlike electric furnaces where recycled metal is nearly 100% of the raw material charge, the basic oxygen process can use only a portion of steel scrap. Since using scrap is less expensive than making steel from virgin ore, the industry will increase the scrap percentage as high as it technically can.

According to the Steel Recycling Institute, the total 1995 recovered material percentage in sheet steel was 27.8%. This percentage includes internally generated scrap as well as purchased preconsumer scrap. The postconsumer content was 12.8%.

Plastic Cans and Carts

Most plastic cans and carts are made with polyethylene (PE). Some recycling containers are polyethylene terephthalate (PET) or polystyrene (PS). PE can be injection molded, blow molded or rotation molded. All molding processes can use postconsumer resin although resins differ in each molding process. Blow molded items, like bottles, are best recycled by blow molders although some can be used in injection molding systems. Injection molded items, like milk and soft drink crates, are recycled into injection molded trash cans and recycling containers.

Paper Trash Containers

Years ago, the City of Oakland switched to waxed corrugated litter boxes to avoid theft. These boxes are emptied like other types of trash cans and remain in use for many weeks. Trash can liners are not used. According to parks personnel, the boxes rarely wear out during the park season. They distribute fewer during the winter. The current contract for 10,000 boxes calls for 10% postconsumer content.

EPA Designation - only office trash and recycling containers

EPA designated office recycling and trash containers made from metal, plastic and paper. If other materials, such as wood, are specified, no recycled content requirement would apply. Recycled content standards depend on the type of material.

Minimum Recycled Content Standards

Metal: EPA recommends 25% to 100% recovered metal for wastebaskets. Since all sheet metal products contain at least 27% recovered metal and the industry would increase this percentage if technically feasible, there is no reason to establish a minimum recycled content standard. All metal trash cans have the highest feasible amount of recovered metal.

Paper: Corrugated fiberboard is used for litter boxes and indoor recycling containers. The recommended content standard for corrugated paperboard in Alameda County is 50% postconsumer content. (Refer to File Storage Boxes.) The paper industry measures postconsumer content by total fiber weight, not total product weight.

Plastic: Manufacturers use a variety of plastic resins for trash cans and similar products. The most common are low density polyethylene (LDPE) and high density polyethylene (HDPE). Some use polystyrene (PS) and polyethylene terephthalate (PET). Recycled content varies widely among manufacturers so EPA set its recycled content levels at 20% to 100% postconsumer content.

Durable rolling carts can contain 10% postconsumer resin in the bodies and 50% in the lids according to most manufacturers.

Most trash can manufacturers discontinued use of recycled plastic in trash cans due to lack of demand from their customers. They still use postconsumer resin in recycling containers and can provide trash cans with recycled content if order quantities are large enough.

Trash Cans: The following recommended standards for trash cans are based on total product weight for plastic and total fiber weight for paper.

Recommended Postconsumer Recycled PLASTIC Content = 20%
Recommended Postconsumer Recycled PAPER Content = 50%

Rolling Carts: The standard for rolling carts is based on manufacturers' capabilities.

**Recommended Postconsumer Recycled PLASTIC Content =
10% body and 50% lids**

Reduction Opportunities

Durability and reusability are the two key reduction characteristics. Parks and Recreation agencies around the country use reconditioned steel drums for outdoor trash and litter containers as the least expensive, most durable option. These are cleaned and painted by suppliers. When staff empty the drums, they leave the plastic liners in place unless they are soiled.

Durability is particularly important for trash cans or rolling carts provided to residents. They must withstand mechanical handling for many years. When there are thousands of residents in the program, it is very expensive to replace waste receptacles.

Cost

Durable litter containers are less costly in the long run than corrugated cardboard. However, when theft is a problem, paper makes economic sense. According to several manufacturers, recycled plastic trash cans and similar containers are comparable in price to virgin alternatives for large orders. All metal cans have recycled content so cost is not an issue.

SPECIFICATION ISSUES

Standard Specifications

Trash Cans: Few use complex specifications for standard trash cans and wastebaskets. Usually the type of material, size in gallons and type of lid is sufficient. Some jurisdictions cite a brand name and allow equal products to qualify. Ultraviolet light stabilization for plastic costs more but increases product life in outdoor applications.

Rolling Carts for Outdoor Use: You may need more detailed specifications for rolling carts. Requests for bids often require 10 year warranties against defects like cracking, chipping, peeling, distortion, failure of attachments, weathering degradation, lower resistance to aging due to normal operational use and so on.

You should describe the type and size to assure compatibility with collection vehicles. Components should be interchangeable and available individually for future repairs. You must describe exactly what your identification requirements will be; some communities use automated tracking mechanisms, others merely want their logotypes on the containers. Other common performance requirements are stability, compression force in pounds per square inch and lifting/dumping capability in pounds. Requirements for smooth, glossy interior finish help avoid uneven emptying of container contents.

Test Procedures

Special tests are not critical for standard trash cans. If you contemplate changing from one type to another, place some samples in use. Your maintenance staff can monitor how the new type of container performs.

Rolling refuse carts cost more and have more stringent performance requirements. The following test methods were adapted from Los Angeles, CA, Tempe, AZ and manufacturers' performance tests based on 10 year warranties. You should match the test weight to your weight requirement.

Drop Test for Impact, Shock and Fatigue Resistance: Pick up the container with a load of 250 pounds to a height of 5 feet then drop it on a concrete surface. Lift and drop the container from a vertical position so it lands on its bottom although there is no guarantee that containers will drop in a specific manner. Repeat the test 5 times. Inspect the integrity of the cart and the wheel/axle mechanism after each drop. Any damage that renders the container unserviceable or non-repairable constitutes failure.

Stress Crack or Durability Test for Fatigue: Subject the container to gripping, lifting and dumping cycles for X repetitions with a load of 250 pounds evenly distributed in the container.

NOTE: X represents the number of dumps expected during the length of the warranty period. Determine reasonable failure expectations based on your own testing parameters.

Adjusting Specifications

First, you should determine whether you want metal, plastic or paper trash containers. For paper and plastic, you should insert the minimum recycled content standard in your specification, but be flexible. Allow yourself a fallback position to accept virgin alternatives when you specify plastic. Recycled content should be mandatory for recycling containers no matter what material you select.

Adapt rolling cart or other special container specifications by detailing the performance characteristics you require. Request the test results you need or explain your test procedures in bid documents.

Avoid Specifying Design Details: When you specify weight and dimensions, wall thickness, the type of plastic molding and similar details, you can limit your suppliers' options unnecessarily. If durability is your concern, use warranty requirements.

Avoid Light Colors: In the case of plastic, the color you specify can affect the use of recycled plastic. It is much easier to use postconsumer plastic in darker colors like blue, green, red, maroon, brown and black than in light or transparent colors like white or yellow. Avoid specifying light colors. Color is not a problem with recycled paper containers.

USING AGENCIES

All agencies use trash cans and many of the similar products as well. If they are not on central contracts, agencies buy these products through office supply contracts, janitorial supply contracts or with purchase orders. Most agencies buy these products in small quantities.

Large purchases are most likely at General Services and Parks and Recreation agencies. Trash cans and similar products may be bought as well through janitorial maintenance contracts.

Solid Waste agencies control waste management services and specifications for residential trash cans and recycling containers. If the contractor will supply trash and recycling containers, recycled content should be mandatory.

USAGE ISSUES FOR TRASH CANS AND CARTS

Maintenance staff prefer fewer spills when emptying trash containers. Smooth interior finishes keep trash can liners from snagging or breaking. Weight also matters. Outdoor containers must be anchored or heavy enough to keep them upright in windy weather. Interior containers can be lighter weight and easier to empty without removing unsoiled can liners.

Size matters too. Trash cans cannot be too big to handle easily, but they should be big enough to contain all the trash that accumulates during normal collection schedules. As recycling and reduction programs expand, there should be less trash for disposal. Larger cans may be emptied less frequently or smaller trash cans may be ordered.

If rolling carts will be emptied automatically, specifications must be coordinated with collection equipment. As these are durable products, any long term changes in collection vehicles or containers must be compatible.

SOURCES FOR RECYCLED CONTENT TRASH CANS AND CARTS

The Recycled Product Guide lists many types of containers with recycled content, including refuse containers. The EPA listing of non-paper office product manufacturers of recycling containers includes many companies that produce trash cans as well.

TRASH CAN LINERS

Sometimes called trash bags, garbage bags, utility liners or just bags, trash can liners are made to be thrown away with the trash they contain. The thin plastic used to make them is called “film”.

APPLICATIONS

Can liners come in three major categories:

- all-purpose bags used in offices, kitchens and laboratories;
- large, indoor general use bags to line cleaners’ carts and other janitorial applications; and
- outdoor, heavy duty bags.

Can liners vary in color, size, translucency and design (flat or gusseted). Specialty bags are color coded. Recycling bags are blue and regulated medical waste bags are red. Trash bags are commonly opaque black, green or beige although some are clear. They may be packed in boxes or in rolls.

Similar Products or Uses

All film products have the potential to contain recycled content. Similar plastic bags include: compost bags, recycling bags, carrier bags and grocery bags. Flat film products include: vapor barriers used in construction projects and plastic drop cloths.

ATTRIBUTES

Can liners are made with three major types of polyethylene (PE): low density (LDPE), linear low density (LLDPE) and high density (HDPE).

Can liners are a big user of plastics. According to Modern Plastics, virgin resin sales for can liners were nearly 2 billion pounds in 1995.

Different resins behave differently in use, according to a bag manufacturer that uses them all. LDPE is very clear but has poor puncture strength. LLDPE has good tear and puncture strength, but it tends to cling together and make bags limp and hard to open in thinner gauges. HDPE is stiff and easy to handle, but has poor puncture strength.

Metallocene-based PE (mPE) is entering the market. It has excellent strength in thin gauges. All of the PE resins can be recycled into bags.

The thickness of plastic film is called the gauge and it is measured by mil. One mil is 1/1000 of an inch. Resin and can liner manufacturers continually seek lighter, stronger variations because less plastic per bag is a competitive advantage. It is also wise for waste reduction because trash can liners represent a significant portion of plastic in the waste stream.

However, California tends to have heavier bags than any state in the country because of the California Weights and Measures requirement to print the gauge and case weight on the package. As long as customers consider thicker, heavier bags to be the strongest, source reduction through lighter bags will be hard to achieve.

Even though can liners are made in many sizes, experts in maintenance service organizations save money by ordering only flat bags in three sizes:

40" x 48"	for trash cans and outdoor litter baskets
30" x 36"	for cafeteria trash cans
24" x 24"	for office wastebaskets

They select heavy duty bags for outdoor litter baskets, cafeteria cans and situations where loads are heavy. Medium duty bags work in restrooms and cleaners' carts, and light duty bags serve well in wastebaskets.

EPA Designation

EPA designated trash can liners in the May, 1995 Recovered Material Advisory Notice (RMAN).

Minimum Recycled Content Standards

The EPA recycled content level is 10% to 100% postconsumer content.

According to the California Public Resource Code, Section 42290-422297, all plastic trash bags sold in the state must contain 10% postconsumer material if they are 1.0 mils or thicker. Recognizing that bags are getting thinner, bags .75 mils or thicker must contain 20% postconsumer material by January 1, 1996 and 30% postconsumer material by January 1, 1997. Bags with certain attached closures were exempted in 1995 when AB 1851 extended the time limit for increased postconsumer content in thinner bags.

The recommended recycled content standards mirror California law.

Recommended Postconsumer Recycled Content for bags \geq .75 mils

1996 = 20%

1997 = 30%

Some jurisdictions using the Measure D recycled product definition (50% total recycled content, 10% postconsumer content) recently heard from their vendors. Their trash bags met California postconsumer requirements but did not have the additional 40% recovered material.

Reduction Opportunities

It makes sense to reduce the quantity of plastics thrown away with trash can liners. Jurisdictions in Alameda County already use the most obvious option. Bags are left in wastebaskets and trash cans until they are soiled. Maintenance personnel dump contents into their cleaners' carts and only replace bags when necessary. For sanitary reasons, they discard can liners in bathrooms and cafeterias daily.

Can liners should match the size of the can. Liners that are too big waste material and money.

The strength of the bag should match the use. Experts caution that weak bags waste money because maintenance staff use two bags at the same time to avoid spills. If you specify thinner, stronger can liners, educate maintenance staff at the same time. They may assume that thin bags are weaker than thick bags.

You may have to choose between source reduction and recycled content with trash can liners. In 1996, plastic bags thinner than .75 mils do not have to contain recycled content in California. As bag manufacturers use thinner, stronger resins, you may be offered thin, tough but virgin bags.

Cost

In general, trash can liners with recycled content are less expensive than virgin alternatives because recycled feedstocks cost less. Periodically, though, recycled feedstocks are scarce and may cost more than virgin resin.

SPECIFICATION ISSUES

It is easier to use recycled content in opaque bags than in clear bags. If you need see-through bags, allow for some flaws in appearance. Translucent bags allow maintenance staff to see the contents almost as well as clear bags. Aesthetics should not be a key issue in products designed to be thrown away.

Although many government agencies order bags by thickness (measured in mils), thickness no longer represents strength. Frequently the required mil thickness is heavier than industrial norms. Manufacturers prefer heavy, medium and light duty bag specifications with a load capacity stated for each weight. The 1993 federal General Service Administration specifications for all purpose bags were:

type	size	rating	load capacity
1	24" x 23"	light duty	15 lbs.
2	33" x 39"	medium duty	50 lbs.
3	40" x 46"	heavy duty	75 lbs.
4	36" x 60"	heavy duty	75 lbs.
5	23" x 20" x 48"	heavy duty	75 lbs.

Standard Specifications

Load strength, seam strength, puncture resistance and resistance to tearing are the critical performance requirements for trash can liners. ASTM standards exist for puncture and tear resistance. Simple tests exist for load and seam strength.

Federal Supply Service Commercial Item Description: Bag, Plastic, General Purpose, GSA A-A-2299B: This specification establishes the following minimum criteria:

Characteristic/Test	Light Duty	Medium Duty	Heavy Duty
Impact Resistance ASTM D1709 (gram)	-	150	200
Load Capacity (pound)	15	50	75
Seam Continuity (seconds)	-	60	60

Test Procedures

Most trash can liner manufacturers can provide test data for their off-the-shelf products but they resist making test batches of custom bags prior to bids awards because it is so expensive. You should not expect them to do so if you require liners to be thicker than standard.

Two ASTM test procedures measure impact resistance and tear resistance:

ASTM D1709, Standard Test Method for Impact Resistance of Plastic Film by the Free-Falling Dart Method: This test, often called the dart test, determines how much pressure in grams will puncture a can liner.

ASTM D1922, Standard Test Method for Propagation Tear Resistance of Plastic Film and Thin Sheeting by Pendulum Method: This test measures tear resistance, also called zippering or splitting.

GSA tested seam continuity by filling bags with hot water (120 degrees F) weighing 50% of the test load, grasping the bag within 12 inches from the top and holding it 12 inches or more off the ground for 60 seconds. Any leakage meant the bag failed.

GSA used a drop test to measure load capacity. Simple drop tests are easy to conduct and they usually provide enough performance information to your users. Rutgers University, in New Jersey, uses the following test method successfully and exclusively. It measures load capacity and bursting strength.

All bags shall be capable of handling 6 pounds of weight per cubic foot of volume. They shall not break if lifted by the top of the bag and shall survive a 4 foot (one time) drop test. For the drop test, the bag shall be 3/4 filled with material density of 6 pounds per cubic foot and sealed by normal means. No efforts shall be made to eliminate normal head space.

When you design your own drop test based on this model, use the same type of filling materials to test all competing bags. Otherwise you will not get fair comparisons. Many use a combination of filled and empty cans.

Adjusting Specifications

Insert the recycled content requirement in the specification. State the color if necessary and whether bags must be translucent or opaque. If you order many sizes and weights of bags, you may want to examine why the variations are necessary. If users cannot justify a special size or weight, substitute a standard bag.

To eliminate out-dated mil thicknesses, you should determine how bags of different sizes are used. Then, order the sizes you really need in light, medium or heavy duty weights according to use. It should not be necessary to specify the resin type.

You can use the federal specifications to help establish your own criteria. Since drop tests measure the most important characteristics inexpensively, you should ask suppliers to provide drop test results. You should also describe what you consider failure for trash can liners.

You can specify recycled content in bags supplied by your maintenance service companies as well.

USING AGENCIES

Parks, General Service, and Public Works agencies are the most common users of trash can liners.

USAGE ISSUES FOR RECYCLED TRASH CAN LINERS

Maintenance staff want trash can liners that will not break when they empty trash and transport it to central pick-up points. They want bags that can be opened easily and are easy to transport on their rounds.

SOURCES FOR RECYCLED TRASH CAN LINERS

All recycled product directories contain listings for recycled trash can liners.

The California Integrated Waste Management Board maintains complete listings of manufacturers that comply with postconsumer recycled content requirements in State law. Not all listed manufacturers have liners with recycled content. The list includes companies with bags too thin to be covered by the law or who were exempted because they could not obtain postconsumer feedstocks as well as those with recycled content. Most of the major manufacturers of consumer trash can liners are exempt from the law because they have affixed closure mechanisms.

UNBOUND AGGREGATES

Aggregates are loose stony or sandy materials. Originally they were naturally occurring sand, gravel and crushed rock. Unbound aggregates are used loose and compacted on-site. Bound aggregates are held together with binders like asphalt and cement.

APPLICATIONS

Glass Aggregate: Crushed glass, called cullet, was a special focus of this evaluation. It can be crushed to the consistency of sand or into larger, gravel-sized pieces. Unlike other parts of the country, California has ready markets for mixed-color cullet. However, bottle cullet contaminated with other types of glass, stones or ceramics is not acceptable to container and fiberglass manufacturers. Stockpiles of contaminated cullet at glass processors can be used in lower value applications like aggregates although the quantity will always be small compared to total aggregate demand.

Glass cullet aggregate applications include: general backfill; roadway base, sub base and embankments; utility trench bedding and backfill; and drainage fill. Glass used as a filter media in sewage treatment systems is being studied by the Clean Washington Center. Initial results are promising. Some urban areas, like New York City, use most of their recycled glass in glassphalt pavement.

Other Materials: Postconsumer asphalt and concrete reclaimed from demolition projects are used for all fill applications. In addition, recycled asphalt pavement (RAP) and recycled portland concrete cement (PCC) are used in bound applications like new asphalt and concrete pavement. Preconsumer materials, like steel foundry slag and ash from coal burning plants are used in bound and unbound applications as well.

ATTRIBUTES

Readily available recycled materials for unbound aggregate include crushed glass, slag, concrete or asphalt pavement. Crushed porcelain from outdated bathroom fixtures may be available in some areas. Some suppliers blend reclaimed and virgin aggregates, others provide raw, crushed materials to be blended by contractors.

EPA Designation - None

Minimum Recycled Content Standards - None

There are no minimum content standards for recycled aggregates. Maximum standards are used frequently. These standards allow available supplies to be mixed with conventional aggregates when there is not enough recycled material for an entire job. In some cases, maximum standards are based on the engineering characteristics of the recycled aggregate.

Reduction Opportunities

Demolition materials, such as concrete and asphalt pavement, can be crushed and used as aggregates on site. Standard construction specifications allow this practice. There are no reduction opportunities for glass aggregate.

Construction Specifications Institute (CSI) Divisions

Recycled aggregates appear in the same CSI headings as conventional aggregates.

Cost

Reclaimed asphalt and concrete aggregates are generally less expensive than virgin counterparts. Glass aggregate may be more expensive in California because it is scarce and because its use is relatively new.

SPECIFICATION ISSUES

Standard Specifications

Most of the specifications cited for unbound aggregate have been adjusted to include glass and other recycled materials. Examples include:

National Standard Plumbing Code: According to the 1992 revisions to the 1990 code, Chapter 13, Storm Drains, 13.1.5, Subsoil Drains, states:

...subsoil drains may be positioned inside or outside of the footings, and shall be of perforated or open joint approved drain tile or pipe not less than 3" in diameter, be laid in gravel, slag, crushed rock, approved 3/4" crushed glass aggregate, or other approved porous material with a minimum of 4" surrounding the pipe on all sides.

CalTrans Standard Specifications: CalTrans amended its aggregate base specifications to include recycled materials in response to A.B. 1306.

Section 25-1.02A, Class 1, Class 2 and Class 3 Aggregate Subbases and Section 26.1.02A Class 2 Aggregate Base state in part:

Aggregate for Class 1, Class 2 and Class 3 Aggregate Subbase shall be clean and free from organic matter and other deleterious substances, and shall be of such nature that it can be compacted readily under watering and rolling to form a firm, stable base. Aggregate may include or consist of material processed from reclaimed asphalt concrete, portland cement concrete, lean concrete base, cement treated base, glass or a combination of any of these materials. Aggregate subbase incorporating reclaimed glass shall not be placed at locations where surfacing will not be placed over the aggregate subbase.

Section 26.1.02A also includes: Untreated reclaimed asphalt concrete and portland cement concrete will not be considered to be treated with lime, cement or other chemical material for purposes of performing the Durability Index test.

CalTrans evaluated RAP, reclaimed portland concrete cement, foundry slag, crumb rubber, ash and glass in 1990 for use in aggregate base, aggregate subbase asphalt concrete, cement treated base, lean concrete base, permeable material and portland cement concrete. All materials were acceptable for more than one application, but variations exist for specific materials to be used in individual applications. All relevant specifications were revised.

Standard Specifications for Public Works Construction (Greenbook):

200.2, Untreated Base Materials, are listed in order of preference:

200-2.2 crushed aggregate base (rock and rock dust) or

200-2.3 crushed slag base (blast furnace or steel production slag),

200-2.4 crushed miscellaneous base (asphalt concrete, portland cement concrete, crushed aggregate base or other rock,

200.2.5 processed miscellaneous base:

broken or crushed asphalt concrete, portland cement concrete, railroad ballast, glass, crushed rock, rock dust or natural material.

ASTM C33 Standard Specification for Concrete Aggregates: Although this specification was revised in 1993, no new accommodations for reclaimed materials appeared in the general characteristics for fine and coarse aggregates.

Fine aggregate: natural sand, manufactured sand or a combination thereof.

Coarse aggregate: gravel, crushed gravel, crushed stone, air-cooled blast furnace slag, or crushed hydraulic cement concrete, or a combination thereof. (A note explains drawbacks to using hydraulic cement concrete.)

Unbound Glass Aggregate Specifications

Dames and Moore, Inc. conducted engineering studies for the Clean Washington Center in 1993. They recommended the cullet specifications in Table 15-II.

Adjusting Specifications

The easiest method to adjust specifications for all recycled materials is to cite CalTrans. Initial attempts around the country to specify glass cullet as an aggregate identified several problems. The usual result was very expensive aggregate.

Avoid Specifying 100% Recycled Material: When supplies are scarce, costs rise. For glass, you will have more success if you state a preference for glass cullet, use the National Sanitation Foundation or CalTrans specifications described above, and allow glass up to the maximum percentage recommended in Table 15-II.

When you specify “up to” a certain percentage of any recycled aggregate, you provide the necessary flexibility. Contractors can use all the available supplies they can find and supplement the quantity with virgin aggregates as necessary to meet the quantity needed for an individual project.

Avoid Mention of Hazardous Materials: Those who specify no hazardous materials or that cullet and other recycled aggregates should pass TCLP tests find few willing bidders. Hazardous content in glass is rare. Minute quantities may appear in residues from bottle contents or in bits of lead remaining from lead bottle wrappers. For other recycled aggregates, know your suppliers. If prices are too good to be true, get details about their sources.

Table 15-II
CULLET APPLICATION SPECIFICATIONS

Application	Maximum Cullet Content %	Maximum Debris Level %	Minimum Compaction Level	Gradation	
				sieve size	% passing by weight
General Backfill Applications					
Stationary Loads	30	5	95	3/4"	100
Fluctuating Loads	15	5	95	1/4"	10 to 100
Non-loading Conditions	100	10	85	#10	0 to 50
				#40	0 to 25
				#200	0 to 5
Roadway Applications					
Base Course	15	5	95	3/4"	100
Subbase	30	5	95	1/4"	10 to 100
				#10	0 to 50
Embankments	30	5	90	#40	0 to 25
				#200	0 to 5
Utility Trench Bedding and Backfill Applications					
Water & Sewer Pipes	100	5	90	3/4"	100
				1/4"	10 to 100
Electrical Conduit	100	5	90	#10	0 to 50
				#40	0 to 25
Fiber Optic Lines	100	5	90	#200	0 to 5
Drainage Fill Applications					
Retaining Walls	100	5	95	3/4"	100
Foundation Drainage	100	5	95	1/4"	10 to 100
				#10	0 to 100
Drainage Blanket	100	5	90	#40	0 to 50
				#200	0 to 5
French Drains	100	5	90		
Miscellaneous Applications					
Landfill Cover	100	10	90	3/4"	100
Underground Tank Fill	100	5	90	1/4"	10 to 100
				#10	0 to 50
				#40	0 to 25
				#200	0 to 5

Source: Glass Feedstock Evaluation Project, Evaluation of Cullet as a Construction Aggregate, Dames & Moore, Inc. prepared for the Clean Washington Center, June 1993

Avoid Washing or Stringent Contaminant Requirements: Glass processors rarely wash cullet. It will not be *free* of debris, but there will not be much. The maximum debris levels in the recommended specifications are sufficient.

Avoid Specifying Particle Shape: The following words in one glass aggregate specification deterred bidders: “Cullet shall be certified by the supplier to be 100% free of sharp conchoidal fracture surfaces. All edges shall be rounded”. Properly processed cullet is no sharper nor more dangerous than conventional aggregates. Rounded aggregates do not compact well.

Include a Deleterious Material Cause: The following clause is adapted from the Greenbook, 200-1.1.

All aggregates shall be free of any detrimental quantity of soft, friable, thin, elongated or laminated pieces, disintegrated material, organic matter, oil, alkali or other deleterious substance.

USING AGENCIES

Recycled unbound aggregates are specified by Public Works, General Service, and Parks and Recreation agencies in their construction contracts. General Service or Purchasing Agencies may have term or blanket contracts for aggregates as well. Road construction uses the majority of aggregates. Smaller volumes can be tested by other agencies as base material for sidewalks, parking lots, trench fill and storm drains around building perimeters.

USAGE ISSUES FOR RECYCLED UNBOUND AGGREGATES

The most significant issue is availability. Despite your and your contractors best intentions, local supplies may not meet requirements. Glass is available on and off again. Other reclaimed materials are easier to find.

If you have never specified recycled aggregates before, choose your test projects carefully. You should start with small jobs that you can monitor. This is particularly true for glass aggregates. Backfill for trenches or subsoil drains requires less material than a roadway project.

Contractor resistance should not deter you. If your contractors are reluctant to use unfamiliar materials, you can require them to use specified recycled aggregates unless they can certify that no supplies were available for an individual job.

Alameda County revised its aggregate base specifications to conform to CalTrans. The Public Works Department may have useful experience to share.

SOURCES FOR RECYCLED AGGREGATES

Contact your recycling coordinator, county or state recycling offices and construction product directories to identify potential sources. The Alameda County Waste Management Authority distributes a pamphlet, *Building for Tomorrow*, that identifies potential sources of recycled aggregates. Glass cullet sources may be added in the future.

APPENDIX I

SUMMARY OF CLAUSES

This appendix contains the key clauses and definitions recommended in various chapters. The order loosely follows the organization of the Model Policy in Chapter 2. The chapters that describe each clause are referenced. Brackets, [], indicate variable information or instructions.

Some clauses are for policy documents, others are for purchasing documents. The intended use of each clause is identified as “Policy” or “Bid and Contracting Document Clause.”

It is critical to consult your legal department before inserting clauses in purchasing documents. Adjustments to existing clauses may be necessary or these recommendations may be revised to meet your procurement legislation. You will want to preserve the intent of recycled and source reduction product purchasing clauses if changes are necessary.

GENERAL POLICY CLAUSES

General Policy

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 1, and Chapter 6: Recycled Product Standards

It is the policy of [jurisdiction] to purchase source reduction products and/or recycled products containing the highest amount of postconsumer material practicable or, when postconsumer material is impracticable for a specific type of product, containing substantial amounts of recovered material. Such products must meet reasonable performance standards, be available at a reasonable price and be available within a reasonable time.

Equipment Compatibility

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 1.

All equipment bought, leased or rented shall be compatible with the use of source reduction and recycled products.

Promotion

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 1.

[Jurisdiction] shall promote its use of source reduction and recycled products whenever feasible.

DEFINITIONS

Policy and Bid and Contract Documents: Reference Chapter 2: Policy and Implementation Guides — Section 2, which has additional definitions, and Chapter 5: Definitions.

“Ownership Cost” means total ownership costs during a product’s life cycle, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.

“Postconsumer Material” means a finished material which would normally be disposed of as a solid waste, having completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

“Preconsumer Material” means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Preconsumer material does not include mill and manufacturing trim, scrap, or broke which is generated at a manufacturing site and commonly reused on-site in the same or another manufacturing process.

“Price Preference” means the percentage allowance for a recycled product that costs more than a comparable virgin product. In bid situations, it is the percentage above the lowest cost of a comparable virgin product allowed for a recycled product when both bidders are responsible and responsive.

“Recovered Material” means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material, but does not include excess resources of the manufacturing process.

“Recycled Content” means the percentage of recovered material, including preconsumer and postconsumer materials, in a product.

“Recycled Content Standards” means the minimum or maximum level of recovered material and/or postconsumer material necessary for products to qualify as “recycled products,” as established by [jurisdiction].

“Recycled Product” means a product that meets [jurisdiction’s] recycled content policy objectives for postconsumer, preconsumer and recovered material.

“Remanufactured Product” means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

“Reused Product” means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting or minor repairs.

“Source Reduction Product” means a product that results in a net reduction in the generation of waste, and includes durable, reusable and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

POLICY IMPLEMENTATION

Cooperative Development of Implementation Guidelines

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 3.

The [Director of Procurement or authorized representative] shall, in cooperation with [the Department of Solid Waste and any other relevant departments, offices or agencies], develop administrative guidelines to implement this policy.

Purchasing Document Review

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 3.

The [Director of Procurement or authorized representative] shall ensure that purchasing documents, specifications, and contracting procedures do not discriminate against source reduction or recycled products.

Establishing Recycled Content Standards

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 3.

The [Director of Procurement] shall establish recycled content standards and is authorized to raise or lower them to meet the objectives of this policy. The decision to change any recycled content standards shall be substantiated in the annual report.

Exempt Product Categories

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 3 and Chapter 14: Recycled Product Opportunities.

The [Director of Procurement] is authorized to exempt product categories from this policy in cases when all products contain recycled content [such as metals], or when health or safety may be jeopardized [such as pharmaceuticals] or when multiple complex components or the nature of the product make certification of recycled content impracticable [such as automobiles, computers, and software]. The [Director of Procurement] shall maintain a list of products exempted from this policy.

Recycled Content Requirements

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 3 and Chapter 6: Recycled Content Standards.

The [Director of Procurement] shall establish recycled content standards and is authorized to raise or lower them to meet the objectives of this policy. The decision to change any recycled content standard shall be substantiated in the annual report.

Bid and Contract Document Clauses: Reference Chapter 6: Recycled Content Standards.

Minimum (Maximum) Recycled Content Requirements: Use this clause to state recycled content requirements in bid documents and to state your policy about accepting more postconsumer content and less total recovered content when applicable.

*The minimum [or maximum] recycled content requirements are as follows, however; less total recovered material will be accepted if substantially more postconsumer material is offered:
[insert product category(s) and recycled content standard(s)].*

Certification Requirements: Use this clause to establish requirements for certifying recycled content.

All bidders of recycled products must complete the certification form [insert where the form is found in the bid document]. For the products to be supplied, state the minimum percentage of recycled material according to total product weight, or fiber weight for paper, or total weight for the core material in products with variable facings. The minimum percentage may be higher than required by minimum recycled content standards found [in specifications or location of standards in the bid document]. When bidders do not submit certifications, the recycled content will be considered zero.

All New Products

Bid and Contract Document Clause: Reference Chapter 8: Bid and Contracting Procedures.

Adapt “all new” clause to allow the following:

items made with recycled materials as well as approved remanufactured items, components and fixtures.

Warranty

Bid and Contracting Document Clause: Reference Chapter 8: Bid and Contracting Procedures.

Equipment or vehicle warranties shall not discriminate against remanufactured products or components used for standard maintenance, nor against recycled products used in operation or maintenance of the equipment or vehicle.

Packaging

Bid and Contracting Document Clause: Reference Chapter 8: Bid and Contracting Procedures and Alameda County documents.

[Jurisdiction] is an environmentally responsible employer and seeks all practical opportunities for source reduction and recycling. [Jurisdiction] encourages its vendors to reduce waste volume and toxicity by using environmentally preferable packaging material whenever possible. Options may include backhauling product packaging to the supplier for reuse or recycling, shipping in bulk or reduced packaging, using vegetable-based inks for packaging printing, using reusable product packaging, or using recycled content or recyclable packaging material.

Cooperative Purchasing

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 3, and Chapter 12: Cooperative Purchasing.

The [purchasing entity] is authorized to participate in, and encourage other public jurisdictions to participate in, cooperative purchasing agreements.

Bid and Contract Document Clause: Reference Chapter 12: Cooperative Purchasing and Alameda County.

Other tax supported agencies in the State of California who have not contracted for their own requirements may desire to participate in the contract. The contractor will be requested to service these agencies and will be given the opportunity to accept or reject the additional requirements. If the contractor elects to supply them, orders will be placed directly by the agency and each agency will make payment directly to the contractor.

PRECEDENCE

Waste Management Hierarchy

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 4.

When conflicts occur in product selections, the following hierarchy shall be used:

- *reduction in quantity, volume, weight or toxicity;*
- *reusability;*
- *recycled content.*

Buyers shall maximize this hierarchy whenever possible. Products shall also be evaluated for recyclability.

Ownership Costs

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 4.

All [jurisdiction] departments, offices and agencies may evaluate environmental benefits and ownership cost when evaluating prices to determine the lowest responsible bid.

PRICE PREFERENCE/REASONABLE PRICE

Recycled or Source Reduction Products Despite Cost

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 5.

Buyers shall buy recycled and source reduction products whenever possible.

Price Preference

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 5 and Chapter 7: Price Preference.

This policy establishes a price preference of up to [percent] for products that contain at least the minimum of recycled content specified.

Flexibility to Spend Above the Price Preference Limit

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 5 and Chapter 7: Price Preference.

The [Director of Procurement] is authorized to purchase recycled products when the price differential is higher than the price preference allows when the [Director of Procurement] determines in writing that the additional cost is reasonable and in the best interests of [jurisdiction].

Flexibility to Raise or Lower the Price Preference

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 5 and Chapter 7: Price Preference. The percentage for flexibility should equal the price preference percentage to allow the preference to be eliminated for individual product categories when it is no longer needed.

The [Director of Procurement] is authorized to raise or lower the price preference up to [insert percentage] for recycled product categories in response to market conditions. The decision to change the price preference shall be substantiated for each product category.

Flexibility to Overcome Lowest Cost Without a Price Preference

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 5.

On a case-by-case basis, the [Director of Procurement] is authorized to purchase recycled or source reduction products at more than the lowest cost when the following conditions are met:

- a. the price differential is no greater than [insert percent or dollar amount] over nonrecycled or non-source reduction products;*
- b. the bidder is responsive and responsible;*
- c. the [Director of Procurement] determines in writing that the additional cost is in the best interests of [jurisdiction]; and*
- d. no substantial budget impact would result.*

APPLICATION**Applicability to All Entities**

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 6.

All [jurisdiction] departments, offices, agencies, contractors and grantees shall comply with this policy.

REPORTING**Report from Purchasing Entity to Governing Board**

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 7.

The [Director of Procurement or authorized representative] shall report to the [jurisdiction's governing board] annually, for both recycled and source reduction purchases:

- *annual dollar expenditures*
- *% change from previous years*
- *% represented of total purchasing budget*
- *total savings or cost for using recycled or source reduction purchases, and*
- *the number of product types bought in each category.*

The annual report shall also include identification and discussion of instances in which this policy has been waived or found impracticable, a discussion of other barriers to the procurement of recycled products, and any instances when recycled content standards or price preferences were adjusted.

Vendor Reports

Bid and Contract Document Clause: Reference Chapter 10: Monitoring Tools

Both Recycled and Virgin Counterparts: For competition between virgin and recycled counterparts on the bid.

Recycled Reporting Requirement: The vendor shall report the subtotal dollar and unit volume of recycled and nonrecycled [insert item, commodity, class, category] supplied to each department as well as the total dollar and unit volume of [insert item, commodity, class, category] sold to the jurisdiction under this blanket order [contract, agreement]. For each recycled [item, commodity, class, category], the vendor also shall

report the average percentage cost difference (+/-) between the recycled products and their virgin counterparts and the total equivalent cost of virgin counterparts based on these percentages.

The reports shall be typed, show the name of the firm and the contract/agreement number, and be signed by the vendor indicating that the vendor certifies the accuracy of all provided information.

The vendor shall submit reports to [specify whom] at [include address] within 30 days [or other time period] following the end of each completed [quarter, 6 months, year]. Failure to provide complete, accurate and timely reports may result in the [jurisdiction] withholding payment until such time as the vendor has remedied the failure to the satisfaction of the [jurisdiction].

Recycled Products Only: For situations when only recycled products are sought.

Recycled Reporting Requirement: The vendor shall report the subtotal dollar and unit volume of recycled [insert item, commodity, class, category] supplied to each department as well as the total dollar and unit volume of [insert item, commodity, class, category] sold to the jurisdiction under this blanket order [contract, agreement].

The reports shall be typed, show the name of the firm and the contract/agreement number, and be signed by the vendor indicating that the vendor certifies the accuracy of all provided information.

The vendor shall submit reports to [specify whom] at [include address] within 30 days [or other time period] following the end of each completed [quarter, 6 months, year]. Failure to provide complete, accurate and timely reports may result in the [jurisdiction] withholding payment until such time as the vendor has remedied the failure to the satisfaction of the [jurisdiction].

RESPONSIBILITY

Establishing Responsibility

Policy: Reference Chapter 2: Policy and Implementation Guidelines — Section 8

The [Director of Procurement] shall work with [the Department of Solid Waste and any other relevant departments, office or agencies] to implement this policy.

Nothing saves more time
than having the right
tools at your fingertips.

APPENDIX II
RESEARCH SOURCES

The principal research materials for this manual were:

A Model Comprehensive Waste Reduction Procurement Program for the City of Tucson, RW Beck and Associates, Markets for Recycled Products and Judith Usherson, 1993

Business Waste Prevention Manual [working title] draft source reduction case studies, Council on the Environment of New York City, 1995

Buy Recycled! The Business and Government Buyers Guide for Recycled Products, Californians Against Waste, 1992

Buy Recycled Training Manual, Fourth Edition, Northeast Maryland Waste Disposal Authority and the U.S. Conference of Mayors, 1995

Closing the Circle News, Office of the Federal Environmental Executive, c/o U.S. Environmental Protection Agency, 1995

Environmental Building News, Brattleboro, VT, 1995

Florida Minimum Recycled Content Technical Study, for the Florida Department of Management Services, SCS Engineers, Markets for Recycled Products, Lallatin & Associates, 1994

Glass Feedstock Evaluation Project, Evaluation of Cullet as a Construction Aggregate, Dames & Moore, Inc. for the Clean Washington Center, 1993

Greenline, Conservatree, 1995

Infocycle Bulletin Board System, data from the California Integrated Waste Management Board, listed 1995

King County, WA, Procurement Information, 1994 and 1995

Preventing Pollution in Our Cities and Counties, A Compendium of Case Studies, U.S. Conference of Mayors, The National Association of County and City Health Officials, National Association of Counties, The National Pollution Prevention Roundtable, Municipal Waste Management Association, Fall 1995.

Recycled Papers, the Essential Guide, Claudia Thompson, 1992

Re-Refined Oil Fact Sheet, U.S. Conference of Mayors, 1995

SHORT CUTS: Simple Hints Offer Resulting Trends, Cooperative Users Together Save, Jan Hansen, City of Berkeley, CA, Purchasing Division

Source Reduction Now, Minnesota Office of Waste Management, 1993

Source Reduction Planning Checklist, Inform, New York, 1992

Suggested Compost Parameters and Use Guidelines, The Composting Council, 1995

Standards Guide, Florida Department of Management Services, 1994

The Official Recycled Products Guide, 1995

U.S. Environmental Procurement Agency Procurement Guidelines, Recovered Material Advisory Notices and related background documents, 1988 through 1995

Waste Reduction Tips, Herndon, VA, 1995

Waste Wi\$e, First Year Annual Report, 1995

You Can Do It Too! Preventing Waste at the California Integrated Waste Management Board, 1994

and sales literature from numerous product manufacturers

**APPENDIX III
RESOURCES****TABLE OF CONTENTS**

Publication Lists	249
Source Reduction	251
Product Source Lists	251
On-Line.....	251
Printed.....	251
Publications.....	252
Reports and Guidance	253
Resource Centers	255
General Recycled Products	256
Recycled Product Contracts In Place.....	256
Monitoring Software.....	257
Product Source Lists.....	258
On-Line.....	258
Database On Diskette.....	260
Printed Directories - National.....	260
Printed General Product Directories - State/Regional.....	261
Printed Directories - Paper.....	263
Printed Directories - Plastic.....	264
Printed Directories - Re-Refined Oil.....	265
Printed Directories - Rubber.....	266
Certified Product Listings and Guidance.....	266
Publications.....	268
General.....	268
Paper.....	270
Plastic.....	270
General Recycling Field.....	271
Government Regulations and Guidelines.....	272
National.....	272
California and Alameda County Legislation.....	272
Specifications and Standards.....	273

Reports and Case Studies.....	274
Waste Exchanges.....	275

Compost	276
Use Guidelines and Test Methods.....	276
Publications.....	277
Building and Construction Products	278
Product Source Lists.....	278
On-Line.....	278
Database on Disk.....	278
Printed Directories.....	279
Publications.....	281
Reports, Case Studies, Guidelines.....	282

APPENDIX III RESOURCES

The resources available to purchasers can improve procurement programs. Brief descriptions in this list will help individuals choose the resources most useful to them. Some new items have been listed although they were not available for review. Information was current as of January, 1996.

When a price is listed, orders or subscriptions should be prepaid. Telephone numbers are provided if further information is needed. Lists and directories can be considered out-of-date as soon as they are printed — companies appear and close, phone numbers and prices change.

Usefulness for Alameda County purchasing personnel is ranked high or medium based on type of information. Resources that would be ranked low are not included.

PUBLICATION LISTS

Several sources provide publications from many different organizations or have many listings of their own. Below are sources which maintain composite or extensive collections and will either send the publications or provide an advantage such as reduced rates.

California Department of Conservation (DOC)

Division of Recycling
801 K Street, MS 18-55
Sacramento, CA 95814
Contact: Resource Center
916-445-1490 or 800-RECYCLE (CA only)
FAX 916-324-1224

- lending library with books, reports, manuals, surveys, studies, encyclopedias, videotapes, article reprints, periodicals
- the Resource Center Guide lists available articles and reports
- BuyCycle: Guides to the Who, What, Where, When and How of Buying Recycled lists recycled product "how-to" manuals and directories, with special focus on California publications
- California Recycling Review, bimonthly, with abstracts of good articles in the library
- borrow materials by phoning first, then faxing requested identification information

California Integrated Waste Management Board (CIWMB)

8800 Cal Center Drive
Sacramento, CA 95826
Contact: Hotline Coordinator, Office of Public Affairs
800-553-2962 916-255-2296 FAX 916-255-2220

- ask for CIWMB Publications List
- Waste Prevention Info Exchange - 916-255-INFO, FAX 916-255-2220

Clean Washington Center

2001 Sixth Avenue, Suite 2700
Seattle, WA 98121
206-464-7040 FAX 206-464-6902

- ask for Report List and Fact Sheets
- large number of reports, studies, evaluations and directories related to recycled products, including building and construction

INFORM

120 Wall Street, 16th Floor
New York, NY 10005
212-361-2400 FAX 212-361-2412

- many useful documents on source reduction, packaging and waste management issues
- variable price scale for non-profits, governments and business

National Recycling Coalition

1727 King Street, Suite 105
Alexandria, VA 22314-2720
703-683-9025 FAX 703-683-9026

- members may subscribe to many recycling-related publications at reduced rates
- contact NRC for listing and rates

SOURCE REDUCTION**PRODUCT SOURCE LISTS****ON-LINE**

To dial into an on-line Bulletin Board System (BBS), use a modem with applicable modem (terminal) software. The BBS listings below include the modem-access phone number. The BBS then appears as screens on your computer.

Viewing an Internet web site requires a World Wide Web browser and access to the Internet through an Internet service provider or an institutional connection. (Some governments and universities are connected.) The provider will set up an account with a modem-access phone number. Some providers give or sell account-holders appropriate browser software to use with their service. Uniform Resource Locators (URL — Internet web site addresses such as “http://www. . . .”) are given below at relevant listings.

California Integrated Waste Management Board

<http://www.ciwmb.ca.gov>

8800 Cal Center Drive
Sacramento, CA 95826
Contact: Ron Weber
916-255-2434

Cost: free

- site is under construction
- currently has general source reduction and recycling information
- planning a comprehensive recycled products database for early 1996

Usefulness: High

CALMAX BBS - 916-448-0615

California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, CA 95826
916-255-2369

Cost: free

- updated weekly
- “waste” exchange
- reusable non-hazardous items, including construction, furniture, office products, paint and many others, that would be discarded but are available to interested users
- everything listed is either free or at nominal cost
- search by goods offered, items desired, type of item, and region

Usefulness: High

PRINTED**CALMAX**

California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, CA 95826
916-255-2369

Cost: free

- bimonthly catalog for “waste” exchange

- reusable non-hazardous items, including construction, furniture, office products, paint and many others, that otherwise would have been discarded but are available to interested users
- everything listed is either free or at nominal cost
- listings by goods offered, items desired, and regional

Usefulness: High

The Official Recycled Products Guide (RPG)

Recycling Data Management Corporation
PO Box 577
Ogdensburg, NY 13669-0577
800-267-0707 FAX 315-471-3258

Cost: \$295 per year with
regular updates, phone
support, RPG newsletter;
\$195 current issue only

- reprinted annually, updated throughout the year
- includes short listing of remanufactured, reused, and reprocessed products
- also thousands of recycled products; see "Printed Directories - National"
- format: 3-ring binder
- indexes: product, geographic location, company by product type
- descriptions of source reduction aspects of products
- California Resource Recovery Association (CRRRA) members can order through Gary Liss, 916-652-4450 FAX 916-652-0250.
- Available on diskette on custom basis for IBM or Macintosh. Data is confidential, not for resale. Costs start at \$295.

Usefulness: Medium - brief but growing source reduction product section

PUBLICATIONS**Business Waste Prevention Manual**

INFORM
120 Wall Street, 16th Floor
New York, NY 10005
212-361-2400 FAX 212-361-2412

Cost: to be announced

- book, due mid-1996
- how-to manual with worksheets
- source reduction techniques
- source reduction product ideas
- numerous case studies

Usefulness: Presumed High for case study information

The Cost Controller

Siefer Consultants
525 Cayuga Street
Storm Lake, Iowa 50588
Contact: Lynn Hardt, Editor
800-747-7342 FAX 712-732-7906

Cost: \$149 yearly,
\$20 Waste
Reduction
special report

- monthly newsletter
- focus: businesses and some government
- waste reduction examples as well as other cost saving strategies

Usefulness: Medium - waste reduction is just part of the coverage

Preferred Packaging Procurement Guidelines

California Integrated Waste Management Board (CIWMB)
8800 Cal Center Drive
Sacramento, CA 95826
Contact: Hotline Coordinator, Office of Public Affairs
800-553-2962

Cost: free

- presents guidelines and goals for source reducing packaging

- includes measuring progress
- directed towards businesses that package products but useful for buyers to know possibilities

Usefulness: Medium

Source Reduction Planning Checklist

INFORM

120 Wall Street, 16th Floor

New York, NY 10005

212-361-2400 FAX 212-361-2412

Cost: \$5, inc. shipping

- pamphlet, 1992
- blueprint for source reduction in checklist format
- contains policy, definition, waste audits, goals and measurement administration, budget, procurement, operations, technical assistance, and more
- procurement and operations sections have excellent suggestions

Usefulness: High - plenty of information in outline format

Waste Reduction Tips

Environmental Newsletters, Inc.

11906 Paradise Lane

Herndon, VA 22071-1519

Contact: Alan S. Orloff, Editor

703-758-8436 FAX 703-758-8436 e-mail: aso@aol.com

Cost: \$97 yearly

- bi-monthly newsletter
- focus: businesses and governments
- newsy, practical tips on source reduction opportunities
- profiles of useful reports and studies
- identifies sources for further information

Usefulness: High - principal medium for transferring ideas

WasteWi\$e Update

United States Environmental Protection Agency

Solid Waste and Emergency Response (5306W)

Washington DC 20406

800-EPA-WISE FAX 703-308-8686

Cost: free

- periodic newsletter
- topic oriented:
 - December, 1994 - general source reduction tips
 - May, 1995 - packaging reduction
- the full program serves businesses but not governments to date

Usefulness: Medium - good tips and ideas but infrequent publication

REPORTS AND GUIDANCE**A Model for A Comprehensive****Waste Reduction Procurement Program**

City of Tucson Solid Waste Management

PO Box 27210

Tucson, AZ 85726-7210

520-791-3106 FAX 520-791-4155

Cost: \$20 report,
\$15 appendix,
inc. shipping

- April, 1994
- guide to implementing a source reduction/recycled product procurement program with Tucson examples for a procurement review process
- source reduction and recycled product purchasing practices

- examples of source reduction practices in Tucson
- purchasing clauses, policies and certification procedures, record keeping practices
- up to 2 copies of executive summary sent for free

Usefulness: High for procedures, medium for examples of practices

**An Ounce of Prevention:
Strategies for Cutting Packaging Waste**

Californians Against Waste Foundation
926 J Street, Suite 606
Sacramento, CA 95814
916-443-8317 FAX 916-443-3912

Cost: \$10 (or included
with Buyers Guide, see
"Printed General Product
Directories - State and
Regional")

- 1994
- a "brainstorming" manual for reducing packaging waste
- many innovative corporate examples
- includes specific focus on implementing waste prevention through procurement decisions

Usefulness: High for strategizing procurement approach to source reduction

Reducing Office Paper Waste

INFORM
120 Wall Street, 16th Floor
New York, NY 10005-4001
212-361-2400 FAX 212-361-2412

Cost: \$15, inc. shipping

- 1991
- methods to reduce paper usage through reduced and double-sided copying
- explains the constraints to paper reduction
- calculation examples that can be adapted to local costs and conditions
- dated information on national copy paper usage

Usefulness: High - methods are adaptable to all types and sizes of organizations

Reusable Shipping Containers

INFORM.
120 Wall Street, 16th Floor
New York, N.Y. 10005-4001
212-361-2400 FAX 212-361-2412

Cost: \$23, inc. shipping

- pamphlet, 1995
- process to shift to reusable shipping containers
- methods to overcome obstacles
- options for government and industry to expand use

Usefulness: High for reducing packaging

Source Reduction Now

Att: Clearinghouse
Minnesota Office of Environmental Assistance
520 Lafayette Road North, 2nd Floor
St. Paul, MN 55155
612-215-0232 FAX 612-215-0246

Cost: single copy free

- free copy in exchange for useful information and reports
- February 1993, being updated
- 95% of information is still current
- practical strategies and practices
- many case studies for source reduction opportunities by product
- procedures to calculate waste and cost savings

Usefulness: High - excellent, replicable strategies and tools

**California Department of Conservation
Division of Recycling**

See "Publication Lists" for contact for available resource materials relevant to source reduction.

California Integrated Waste Management Board

See "Publication Lists" for contact for available resource materials relevant to source reduction.

RESOURCE CENTERS**East Bay Depot for Creative Reuse**

6701 San Pablo
Berkeley, CA 94720-5600
Contact: Rosemary Galani
510-547-6470

- accepts donated materials for schools and community art projects
- can use outdated letterhead and envelopes, paper printed on one side, paper supplies, tubes, cores, all kinds of materials (including non-paper) for craft projects
- will pick up some large quantities
- call to see if they can use your surplus

Usefulness: High for donating materials that otherwise would be disposed or recycled

Non Profit Services

1605 63rd Street
Emeryville, CA 94608
Contact: James Chao
510-658-4760

- accepts used office equipment and furniture
- distributes to non-profit organizations at nominal prices, including some government entities such as schools and hospital programs
- originally established by United Way of the Bay Area to accept in-kind donations, now independent

Usefulness: High for donations, may be useful for some purchasing

Urban Ore

1333 6th Street (6th & Gilman)
Berkeley, CA 94710
Contact: Mary Lou Van Deventer, Daniel Knapp
510-232-7724

- buys or accepts excess property such as office furniture, equipment and salvage building materials
- sells used office furniture, equipment, appliances, building materials and other products for reuse
- three sales areas: building materials (including doors, windows, plumbing, tiles, bricks, lumber, metal fences), general store (household and office furniture and equipment), and arts and media exchange (computers, electronics, arts, books)

Usefulness: High

GENERAL RECYCLED PRODUCTS**RECYCLED PRODUCT CONTRACTS IN PLACE**

The following organizations have contracts for recycled products in place that can be used by communities and qualified organizations. Contact them for their current lists and details about using their contracts for local procurement needs.

Alameda County

General Services Agency - Purchasing
1401 Lakeside Drive, 9th Floor
Oakland, CA 94612
Contact: Gary Holm, Purchasing Agent
510-208-9625 FAX 510-208-9626

Cost: free

California Communities Purchasing Program

California Statewide Communities Development Authority
7901 Stoneridge Drive, Suite 225
Pleasanton, CA 94588-3657
Contact: Steve Hamill
800-635-3993 510-463-8283 FAX 510-463-8457

Cost: free

- jointly sponsored by the League of California Cities and the California State Association of Counties
- available to local governments and special districts in California
- only some contracts include recycled or source reduction opportunities
- contact the organization for the list of contracts and contacts
- entities buy directly from contracts established by a lead city or county

Usefulness: Medium - only a few relevant contracts

California Multiple Awards Schedule (CMAS)

Department of General Services
Procurement Division
PO Box 942804
Sacramento, CA 94204-0001
Contact: Carol Umfleet, Program Manager
916-324-8045

Cost: free

- listing of state contracts with Federal General Services Administration (GSA) contractors for products and services, using Federal Supply Service (FSS) schedules
- many vendors will extend their CMAS contracts to local agencies
- State Procurement Division bills local agencies 1% of the value of each order
- no indication of recycled content; purchasers must research content through vendors

Usefulness: Medium - research required to determine contracts with recycled products

California State Cooperative Purchasing Catalog

Department of General Services
Procurement Division
1823 14th Street
Sacramento, CA 95814
Contact: Ron LaSala
916-327-5573 FAX 916-327-7592

Cost: free

- periodically updated

- lists State product and service contracts available to local entities
- no indication of recycled content; purchasers must research content through vendors
- fax catalog request to Ron LaSala

Usefulness: Medium - research required to determine contracts with recycled products

**U. S. General Services Administration
Federal Supply Service (FSS)**

Office of Acquisition Policy Cooperative Purchasing

- initiative allowing state and local governments to buy from FSS schedules is delayed until the Government Printing Office (GPO) conducts a study of cooperative purchasing
- see CMAS listing above for alternative

MONITORING SOFTWARE**Recycled-Content Product (RCP) Procurement Tracking
and Reporting System**

California Integrated Waste Management Board (CIWMB) Cost: free
8800 Cal Center Drive
Sacramento, CA 95826
Contact: Jerry Hart
916-255-4454 FAX 916-255-2222

- self-contained diskette with user friendly directions to enter, maintain and report data on a personal computer
- uses a "runtime" version of Microsoft FoxPro for Windows v2.5 which does not require any additional database software
- makes data entry, updates, and summary statistics easy to use and understand
- provides for data validation upon entry
- much of program can be tailored to your individual needs
- includes features such as shipping costs, date ordered/received, tax, tracking for price preferences for non-recycled business classifications
- developed for State agency reporting on recycled product procurement
- minimum requirements: 386sx computer, mouse, 4-6 MB RAM, MS-DOS version 3.0 or higher

Usefulness: High

PRODUCT SOURCE LISTS

Most of these listings contain some building and construction products as well as paper, office, janitorial and miscellaneous products. Also see special sections for "Compost" and "Building and Construction Products" in this Appendix.

ON-LINE

To dial into an on-line Bulletin Board System (BBS), use a modem with applicable modem (terminal) software. The BBS listings below include the modem-access phone number. The BBS then appears as screens on your computer.

Viewing an Internet web site requires a World Wide Web browser and access to the Internet through an Internet service provider or an institutional connection. (Some governments and universities are connected.) The provider will set up an account with a modem-access phone number. Some providers give or sell account-holders appropriate browser software to use with their service. Uniform Resource Locators (URL — Internet web site addresses such as "http://www. . . .") are given below at relevant listings.

ABAG Contracts Exchange (ACE) BBS - 510-464-8482

Association of Bay Area Governments
P.O. Box 2050
Oakland, CA 94604-2050
510-464-7900 FAX 510-464-7970

Cost: Free

- at log-in, type *contract*
- allows listing of all contract RFPs (including goods, supplies, equipment, consulting, construction, franchises and leases) in order to ensure widespread advertising within the Bay Area
- easy to list, simply send notice to ABAG to include on BBS
- not a cooperative purchasing bulletin board, although buyers might find contracts listed that could be appropriate for cooperation

Usefulness: High for contract advertising, not for coop purchasing

California Integrated Waste Management Board

<http://www.ciwmb.ca.gov>

8800 Cal Center Drive
Sacramento, CA 95826
Contact: Ron Weber
916-255-2434

Cost: free

- site is under construction
- planning a comprehensive recycled products database for early 1996, including data leased from Recycled Products Guide
- currently can provide print-outs for selected product categories upon request
- site currently has general recycling and source reduction information

Usefulness: High - especially when database is available

EPA Office of Solid Waste

<http://www.epa.gov/docs/OSWRCRA/non-hw/procure/>

- information on and text of Comprehensive Procurement Guidelines and supporting analyses
- listings of suppliers for some products designated by EPA

Usefulness: High - depending on product

Infocycle BBS - 916-445-0518

Division of Recycling
Department of Conservation (DOC)
Sacramento, CA
Contact: Josh Tooker, Sysop
916-445-1490

Cost: free

- need only a modem to dial into this BBS
- new users: access is limited with first log-on - provide the data requested; after security verification (within 24-72 hours), entire BBS is accessible
- databases such as Market Watch (listing of recycled products) and the Recycling Resource Library can be downloaded in dBaseIII format.
- relevant files in the "File" area are:
 - (#20) Publications and Resources - Recycling publications, resources and videos available from the DOC library*
 - (#21) Market Development - includes Market Watch* (listing of recycled products)
 - (#30) California Recycling Review - lists summaries of selected publications on specific topics available from DOC library
 - (#34) Public Procurement - Text of state procurement laws pertaining to local governments, the legislature, and CSU and UC.
- adding information on State buy recycled programs
- starred (*) databases above can only be downloaded, not viewed or searched on-line, because of Infocycle software problem. Timetable for software fix is uncertain, not imminent. Call 916-327-2760 for information on ordering printed versions of the databases.

Usefulness: Medium for general information; Low for product information until Market Watch is functioning, except for those capable of downloading in dBaseIII.

King County Procurement Information System

<http://www.metrokc.gov>

King County Purchasing Agency
Recycled Product Procurement Program
500 - 4th Avenue, Room 620
Seattle, WA 98104
Contact: Karen Hamilton, Eric Nelson
206-296-4210 Fax 206-296-4211

- sample contract language and recycled product specifications used by King County Purchasing Agency
- reports on King County's experience with various recycled products, including construction and maintenance products
- although web site information is general, contact names are provided for follow-up calls regarding first-hand product experiences
- model recycled product procurement policy
- listing of current contract-holders gives information on recycled content and availability of recycled products, although vendors are mostly in Washington State
- includes request for information from other jurisdictions nationally that have model contract language, specifications, tests of products, and other information useful to purchasers

Usefulness:

High for use and application information about many products, including public works products

High for sample language and specifications

Low for vendor information

Recycled Product Clearinghouse BBS - 608-267-2723**Wisconsin Bureau of Procurement**

P.O. Box 7867

Madison, WI 53707-7867

Contact: Dan Wehrman

608-267-6922 FAX 608-267-0600

Cost: free

- periodically updated
- approximately 2000 listings (choose BULLETINS)
- recycled product listings by commodity code
- listing of mill-certified recycled papers (choose BULLETINS for file)
- national although not thoroughly comprehensive
- can get company literature by e-mail to SYSOP or calling contact

Usefulness: High

DATABASE ON DISKETTE**The Official Recycled Products Guide (RPG)**

(See note in RPG listing under "Printed Directories - National")

PRINTED DIRECTORIES - NATIONAL**EPA - Availability of EPA-Designated Products**

See "Government Regulations and Guidelines"

Environmental Products Guide

United States General Services Administration

- no longer distributed to non-federal government agencies
- initiative allowing state and local governments to buy from FSS schedules is delayed until the Government Printing Office (GPO) conducts a study of cooperative purchasing
- see CMAS listing in "Recycled Product Contracts In Place" for alternative

The Official Recycled Products Guide (RPG)

Recycling Data Management Corporation

PO Box 577

Ogdensburg, NY 13669-0577

800-267-0707 Fax: 315-471-3258

Cost: \$295 per year with
regular updates, phone
support, RPG newsletter;
\$195 current issue only

- reprinted annually, updated throughout the year
- California Edition has separate CA listings
- most comprehensive listings in North America, over 650 manufacturers and over 4,000 products, as well as Canadian listings
- format: 3-ring binder
- indexes: product, geographic location, company, brand names
- most companies certify their recycled content in writing
- pre- and post-consumer recycled content listed
- includes short listing of remanufactured, reused, and reprocessed products
- California Resource Recovery Association (CRRRA) members can order through Gary Liss, 916-652-4450 FAX 916-652-0250.
- available on diskette on custom basis for IBM or Macintosh. Data is confidential, not for resale. Costs start at \$295

Usefulness: Very high - wide range of listings

**Resource Guide to Business Product Manufacturers
Recycling Products and Programs**

The Business Products Industry Association (BPIA)
301 North Fairfax Street
Alexandria, VA 22314-2696
800-542-6672 FAX 703-683-7552

Cost: \$80,
inc. shipping

- updated annually
- national listings of paper, office product, some furniture and business machine companies - about 120 members of BPIA only
- alphabetical by company, index of product types
- recycled content sometimes shown
- description of other environmental programs at each company

Usefulness: Medium - best for corporate philosophies and product opportunities

Thomas Register of American Manufacturers

5 Penn Plaza
New York, NY 10001
800-699-9822 x444 FAX 212-290-7373

Cost: \$210 per year

- listing of all types of non-construction products
- arranged alphabetically and geographically by item name
- recycled products not identified
- phone-in information for subscribers, \$50 per inquiry for non-subscribers

Usefulness: High for non-recycled product or accessory research

PRINTED GENERAL PRODUCT DIRECTORIES - STATE AND REGIONAL

There are a number of excellent regional recycled product directories around the nation. However, we have included primarily only those with extensive California listings.

Alameda County Recycled Content Product List

Alameda County Waste Management Authority
777 Davis Street, Suite 200
San Leandro, CA 94577
510-614-1699 FAX 510-614-1698

Cost: Free

- updated Fall, 1995
- compiled from various sources, including conference vendors
- includes both national and extensive Alameda County listings
- no certification or verification of most product contents
- no indication of specific recycled content percentages in products

Usefulness: High - especially for Alameda County vendor information

**BuyCycle: Guides to the Who, What, Where, When
And How of Buying Recycled**

California Department of Conservation (DOC)
Division of Recycling
801 K Street, MS 18-55
Sacramento, CA 95814
Contact: Resource Center
916-445-1490 or 800-RECYCLE (CA only)
FAX 916-324-1224

Cost: Free

- lists recycled product “how-to” manuals and recycled product directories
- special focus on California publications, particularly local guides

Usefulness: High

**The Business and Government Buyers Guide
to Recycled Products**

Californians Against Waste Foundation
926 J Street, Suite 606
Sacramento, CA 95814
916-443-8317 FAX 916-443-3912

Cost: \$24.95

- most recent up-date - 1992
- over 400 post-consumer content products sold in CA
- format: 3-ring binder
- listed by product category and type
- pre- and post-consumer recycled content information
- includes Guide to Packaging Source Reduction
- brief reports on special issues

Usefulness: Medium-High - some listings may be out of date

Buy Recycled Vendor List

City of San Jose
Environmental Services Department
Integrated Waste Management
777 North First Street, Suite 450
San Jose, CA 95112-6311
Contact: Ann Dege
408-277-5533 FAX 408-277-3606

Cost: Free

- listing of recycled product vendors, mostly local

Usefulness: High - particularly with proximity to Alameda County

California Integrated Waste Management Board

8800 Cal Center Drive
Sacramento, CA 95826
Contact: Ron Weber
916-255-2434 FAX 916-255-2222

Cost: free

- developing a comprehensive database of recycled products from all known sources
- plans to provide access through the Internet in 1996
- currently can provide print-outs for selected product categories by request

Usefulness: High

California Market Watch Resource Exchange

California Dept. of Conservation (DOC)
Division of Recycling
Market Development Section
801 K Street, MS 18-55
Sacramento, CA 95814
916-327-2760

Cost: free

- updated monthly
- mix of commercial and consumer items; commercial includes construction, janitorial, office products, parks and recreation, public works, and promotional items
- all products contain postconsumer and/or post-industrial scrap, but there is no discrimination between them nor indication of percentages
- materials (plastic, metals, etc.) are identified

- listings include either dealers or manufacturers, with locations and phone numbers

Usefulness: High - especially for locating sources and local vendors

PRINTED DIRECTORIES - PAPER**Conservatree's Guide to Environmentally Sound Paper**

Conservatree Information Services
10 Lombard Street, Suite 200
San Francisco, CA 94111
415-433-1000 x24 FAX 415-391-7890

Cost: \$59, or free with
subscription to
Conservatree's Greenline

- comprehensive listing of recycled, totally chlorine free, and tree-free papers
- listing indicates pre- and postconsumer recycled content and bleaching
- includes articles on using environmentally sound papers

Usefulness: High - for researching recycled content and bleaching in fine papers

Distribution Management

National Paper Trade Association, Inc.
111 Great Neck Road
Great Neck, NY 11021
516-829-3070 FAX 516-829-3074

Cost: \$5 single issue,
inc. shipping

- June issue only - the environmental issue, updated annually
- most complete national listing of manufacturers, brand names, grades, preconsumer and postconsumer content for all printing and writing papers
- major categories: coated, uncoated, labels, envelopes, carbonless, computer paper, specialty paper with many sub-grades identified
- alphabetical by manufacturer name, no distributor addresses
- this issue of a monthly publication also covers environmental trends in printing paper manufacturing
- useful for double checking information from distributors

Usefulness: High - complete annual list of papers on the market

Jaakko Poyry Recycled Gradefinder

Jaakko Poyry Consulting
560 White Plains Road, 5th Floor
Tarrytown, NY 10591
Contact: Tara Kern
914-332-4497 ext. 328 FAX 914-332-4411

Cost: \$400 per year,
\$100 single issue

- quarterly issues
- lists recycled printing and writing papers and newsprint, indicating pre- and postconsumer content, brightness and basis weights; symbols indicate papers meeting Executive Order and EPA standards
- search by brand, grade, or producer
- subscription includes short focus articles and summaries of interviews with end-users

Usefulness: High - for researching recycled content in fine papers

Paper Buyers Index System For Recycled Papers

PCI Cost: \$37.50
PO Box 679
Valley Forge, PA 19482
1-800-548-5900 FAX 610-933-9313

- published 3 times per year

- lists recycled printing and writing papers, indicating postconsumer and total recycled fiber, grade, EPA qualification, brightness, opacity, much more
- search by grade
- includes short articles about paper companies, papers, and recycling

Usefulness: High

PRINTED DIRECTORIES - PLASTIC**Directory of Companies Manufacturing Products from Recycled Vinyl**

Vinyl Environmental Resource Center
One Cascade Plaza, 19th Floor
Akron, OH 44308
800-969-8469 FAX 216-376-9379

Cost: single copy free

- updated periodically; latest November, 1995
- small brochure format
- about 75 national alphabetical listings by company name
- product index
- recycled content listed

Usefulness: High - recycled content information

Directory of Plastic Lumber Producers

Resource Recycling
PO Box 10540
Portland, OR 97210
503-227-1319 FAX 503-227-6135

Cost: \$4.00

- periodically updated; premier issue September, 1995
- approximately 50 companies in North America, several from CA
- indexed by state and province
- company name, address and principal products
- future editions may have broader details

Usefulness: Medium - low cost but few details in initial edition

Plastic Lumber Trade Association

P.O. Box 80311
Akron, OH 44308-9998
216-762-1963 FAX (same)

Cost: free

- alphabetical listing of members and associates
- geographically keyed to a map
- no details about product types
- information about products is currently being gathered

Usefulness: Medium - best for locating current addresses

Recycled Plastic Products Source Book

American Plastics Council
1275 K Street NW, Suite 400
Washington, DC 20005
800-2-HELP-90 FAX 202-371-5679

Cost: single copy free

- updated periodically; latest August, 1995
- bound, soft cover format
- over 1,200 national product listings by product category and type
- alphabetical company listing
- recycled content described
- limited comments about products

Usefulness: High - low cost, many listings by product type

PRINTED DIRECTORIES - RE-REFINED OIL**Re-Refined Lubricants Buyers Guide**

Safety-Kleen Oil Recovery Company
6325 Joliet Road
Countryside, IL 60525
Contact: Jim Hoffman
800-525-5739 FAX 312-229-0666

Cost: single copy free,
multiple copies - pay
shipping

- updated twice per year
- listing of re-refined oil manufacturers and distributors
- all manufacturers included, not just publisher's distributors
- alphabetical by state
- no product details
- request most recent document by title

Usefulness: High - only complete listing of re-refined oil sources

Re-Refined Oil Fact Sheet

U.S. Conference of Mayors "Buy Recycled" Campaign
1620 Eye Street NW
Washington, DC 20006
202-293-7330 FAX 202-429-0422

Cost: free

- December, 1995
- two-page fact sheet packed with information
- three case studies: U.S. Postal Service; Snohomish, WA; San Diego, CA
- produced in cooperation with the National Recycling Coalition's Buy Recycled Business Alliance
- ask for automobile manufacturers' warranty statements
- offers 3 free cases if a municipality with population of 30,000+ or business with 50+ service fleet vehicles

Usefulness: High - critical, reassuring information for users

**U.S. Conference of Mayors "Buy Recycled" Campaign
Re-Refined Oil Distributor Listings**

1620 Eye Street NW
Washington, DC 20006
Contact: Alisa Stone
202-293-7330

Cost: free

- short report on re-refined oil
- Safety-Keen listing of re-refined oil distributors
- warranty statements from automobile manufacturers on the use of re-refined oil
- information on how to receive free cases of re-refined oil

Usefulness: High

PRINTED DIRECTORIES - RUBBER**Recycled Rubber Products Catalog**

Scrap Tire Management Council
1400 K Street, NW, Suite 900
Washington, DC 20005
202-682-8469 FAX 202-682-4854

Cost: single copy free

- updated annually; latest Fall, 1995
- soft cover, stapled format
- about 100 national alphabetical listings by company name
- subject (product) index
- recycled content information as available

Usefulness: Medium - low cost but limited information

Scrap Tire Users Directory

Recycled Research Institute
PO Box 2221
Merrifield, VA 22116
703-280-9112 FAX 703-280-2845

Cost: \$55,
inc. US shipping

- updated annually; latest January, 1995
- bound, soft cover format
- over 250 national product listings indexed by subject heading
- also indexed listings of markets, processors, brokers, equipment, including geographic indexes

Usefulness: High - well indexed listings, numerous products

CERTIFIED PRODUCT LISTINGS AND GUIDANCE**Certified Product Listings to Green Seal Standards**

Green Seal
1730 Rhode Island Avenue NW, Suite 1050
Washington, DC 20036-3101
202-331-7337 FAX 202-331-7533

Cost: free

- product lists periodically updated
- national listings of products certified to meet Green Seal standards; examples include:
 - GS-1 tissue paper (bath and facial)
 - GS-3 re-refined engine oil
 - GS-7 printing and writing paper
 - GS-9 paper towels and napkins
 - GS-10 coated printing paper
 - GS-11 paints
 - GS-15 newsprint
 - GC-7 office photocopier machines
- standards cost \$10.00 each
- Environmental Partners Program: \$250.00, agreement to provide information and environmental checklists for products with no Green Seal standard, buying guide, newsletter, and product information

Usefulness: High - helpful to agencies that need wide range of help

Certified Product Listings to SCS Standards

Scientific Certification Systems (SCS)
The Ordway Building
One Kaiser Plaza, Suite 901
Oakland, CA 94612
510-832-1415 FAX 510-832-0359

Cost: lists free,
services are variable cost

- over 150 companies, periodically updated, July 1995
- national listings of certified products based on SCS criteria:
 - materials: recycled content, forest practices
 - products and packages: recycled content, biodegradability, forest practices, water efficiency, organic
 - environmental report cards - all characteristics
- ECO-FACTS 1-800-326-3228 - general information about products, environmental claims and more
- program to evaluate a government's guidelines and existing product lists with a life-cycle perspective, specification writing and so on
- specialized service for corporate procurement programs to optimize environmental performance of supplier base

Usefulness: High - certification of specific manufacturers' claims

**Certification and Compliance with CA Law
Recycled Content in Newsprint and Trash Bags**

ATT: Newsprint Certification Program
California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, CA 95826
Hot Line Number: 916-255-2826, CA only: 800-553-2962
FAX 916-255-2573

Cost: free

- lists of consumers or manufacturers who have certified compliance with California laws to CIWMB regarding recycled content in:
 - newsprint (consumers, e.g. newspapers, printers, suppliers)
 - trash bags and can liners (manufacturers)
- requests must be in writing, either mailed or faxed
- ask for the most current list

Usefulness: High - identifies suppliers that comply with CA law

**Manufacturers Certifying Compliance With CA Law
Regarding Recycled Content in Fiberglass**

California Department of Conservation (DOC)
Division of Recycling
801 K Street
Sacramento, CA 95814
Contact: Jack Crawford
916-327-2757 FAX 916-324-1224

Cost: free

- lists of manufacturers who have certified compliance with California laws to DOC regarding recycled content in fiberglass insulation
- certifications are for facilities selling to California only; not valid for other manufacturing plants of parent company
- ask for the most current list

Usefulness: High - identifies manufacturers that comply with CA law

**D 5663 Guide for Validating Recycled Content
in Packaging Paper and Paperboard**

ASTM - Customer Service
100 Barr Harbor Drive
West Conshohocken, PA 19428
610-832-9585 FAX 610-832-9555

Cost: \$15 pre-paid

- detailed technical guidance for certifying the type and quantity of recycled content in a finished product
- procedures conducted by manufacturer based on agreement with buyer
- a model for other types of products although details would have to be changed to meet other manufacturing procedures
- can be cited in specifications for packaging paper and paperboard alone

Usefulness: High for specification writers and those validating recycled content data

PUBLICATIONS

This section includes newsletters and magazines useful to the purchasing community. Sales catalogues and newsletters published as sales tools are not included.

GENERAL**Closing the Circle News**

Office of the Federal Environmental Executive
400 M Street SW (Mail Code 1600)
Washington, DC 20460
202-260-1297 FAX 202-401-9503
e-mail: mcpoland.fran@epamail.epa.gov

Cost: Free

- quarterly newsletter
- articles on implementation of Executive Order 12873, directing federal agencies to buy recycled products, including discussions of problems and solutions

Usefulness: High

King County Recycled Product Procurement Annual Report

King County Purchasing Agency
500 4th Avenue, Room 620
Seattle, WA 98104
206-296-4210 FAX 206-296-4211

Cost: free

- September, 1995
- reports all recycled product activity during the year
- insights regarding policy implementation
- details about products purchased
- comparative information for all years of the program
- education programs undertaken
- recognition for personnel in user agencies
- see on-line listings for Internet web site

Usefulness: High - excellent model for reporting achievements

**A Practical Guide For Obtaining ISO 14001 Certification
Under the New Environmental Management Standard**

ISBN# 0-13-199407-7

Prentice Hall PTR Sales - Order Department

200 Old Tappan Road

Old Tappan, NJ 07675

Contact: W. Lee Kuhre, Author

1-800-223-1360

Cost: \$50.00

plus shipping

- book with word processing templates of required procedures
- WordPerfect/DOS 5.1 and Microsoft Word/Windows 6.0
- realistic environmental management procedures, examples:
 - Environmental Objectives and Targets
 - Regulatory Requirements
 - Procurement and Vendor Controls
 - Design for Environmental Life Cycle Analysis
 - Environmental Performance Evaluation
 - Environmental Aspects of Product Standards

Usefulness: High - for organizations using ISO 14001

Recycled Products Business Letter

Environmental Newsletters, Inc.

11906 Paradise Lane

Herndon, VA 22071-1519

Contact: Alan S. Orloff, Editor

703-758-8436 FAX 703-758-8436 e-mail: aso@aol.com

Cost: \$149 annual

subscription

- monthly newsletter
- focus: manufacturers and buyers
- annual features: directory listings and updates on databases
- bulletin board of news items useful to buyers
- events listing
- profiles of recycled product companies
- initial source for many sources in this listing

Usefulness: Medium for buyers with limited research time

RPG (Recycled Product Guide) Reporter

Recycling Data Management Corp.

PO Box 577

Ogdensburg, NY 13669

Contact: Jackie Boulanger, Editor

800-267-0707 FAX 315-471-3258

Cost: \$75 annual

subscription or free with

subscription to RPG

Directory

- monthly newsletter
- focus: buyers
- news about new products, buy-recycled programs, national initiatives, government programs, etc.
- events listings
- periodic updates of RPG product listings

Usefulness: Medium to buyers with limited research time

PUBLICATIONS - PAPER**Conservatree's Greenline**

Conservatree
10 Lombard Street, Suite 200
San Francisco, CA 94111
415-433-1000 x24 FAX 415-391-7890

Cost: \$69 subscription,
\$49 governments and
non-profits

- quarterly newsletter
- focus on environmentally sound paper issues and analysis, covers recycled paper, source reduction, chlorine free, and tree-free
- subscription includes annual Conservatree Guide to Environmentally Sound Paper
- subscription includes Green Paper on current recycled paper issue

Usefulness: High - excellent coverage of issues plus guide to papers

Recycled Paper News

RP Publications
6732 Huntsman Boulevard
Springfield, VA 22152
Contact: Alicia B. Pitzer, Editor
703-569-0688 FAX 703-569-5086

Cost: \$235 annual
subscription

- monthly newsletter
- focus: recycled paper industry and buyers
- feature articles on paper manufacturing, government initiatives
- new products and publications listings
- news briefs on companies, markets, etc.
- government news
- events listing

Usefulness: High - new products plus excellent coverage of issues

PUBLICATIONS - PLASTIC**Recycled Plastic Update**

Resource Recycling, Inc.
PO Box 10540
Portland, OR 97210
503-227-1319 FAX 503-227-6135

Cost: \$49 annual
subscription

- monthly newsletter
- focus: recycled plastic industry
- new products listings
- news briefs on companies, equipment, processing, markets, government initiatives.
- market data
- information sources
- events listings

Usefulness: High for plastic products buyers and recyclers

PUBLICATIONS - GENERAL RECYCLING FIELD

Publications in this section cover all recycling and source reduction issues. Of the general publications in the field, these are the most useful to purchasing personnel that want more than product information. These publications also include information about new products as they are announced.

In Business

The JG Press
419 State Avenue
Emmaus, PA 18049
610-967-4135

Cost: \$29 annual
subscription

- bi-monthly magazine
- focus on "green" businesses, not only recycling
- frequent articles on recycling businesses
- some listings of new products

Usefulness: Medium

Resource Recycling

Resource Recycling, Inc.
1206 N. W. 21st Avenue
Portland, OR 97209
503-227-1319 FAX 503-227-6135

Cost: \$42 annual
subscription

- monthly magazine
- excellent coverage of wide range of recycling issues
- includes column on new recycled products

Usefulness: High

Waste Age's Recycling Times

Environmental Industry Associations
4301 Connecticut Avenue NW, Suite 300
Washington DC 20008
subscriptions: PO BOX 420168
Palm Coast, FL 32142-0168
800-829-5443 FAX 202-966-4868

Cost: \$99 annual
subscription

- bi-weekly newspaper
- very current articles on all recycling issues, including source reduction and recycled product initiatives
- market data for recyclable feedstocks
- new product section includes recycling equipment

Usefulness: High for general issues, Low for purely product information

GOVERNMENT REGULATIONS AND GUIDELINES

This section includes sources for published regulations and guidelines that affect local procurement activities. Procurement officials should stay abreast of state and local legislation as well.

NATIONAL**EPA RCRA Hotline - 800-424-9346**

Cost: free

This hotline, staffed by Booz-Allen & Hamilton, serves all EPA RCRA and Superfund regulatory issues. Be patient. Staff members are helpful when you reach them. Press the following numbers on their voice mail system:

- 1 - to order documents only
- 3 - for RCRA/Underground Tanks, which includes procurement

Hold patiently for a representative

The following documents are available:

EPA-530-F-95-010	Environmental Fact Sheet: EPA Issues Comprehensive Procurement Guideline (summarizes guideline)
EPA-530-Z-95-006	Comprehensive Guideline for Procurement of Products Containing Recovered Materials (CPG) (applicability and general information)
EPA-530-Z-95-007	Recovered Materials Advisory Notice (RMAN) (definitions and recycled content standards)

Availability lists for items designated by EPA:

- EPA-530-B-95-002 - non-paper office products
- EPA-530-B-95-003 - landscaping products
- EPA-530-B-95-004 - construction products
- EPA-530-B-95-005 - vehicular products
- EPA-530-B-95-006 - transportation products
- EPA-530-B-95-007 - parks and recreation products
- EPA-530-B-95-008 - tissue mills using postconsumer feedstock
- EPA-530-B-95-009 - newsprint with 40% postconsumer feedstock
- EPA-530-B-95-010 - printing and writing paper: computer paper, office paper, envelopes, bristols, coated printing and writing paper

- periodically updated; latest Spring, 1995.
- national, but not comprehensive, listings alphabetical by company name
- only products designated by EPA
- called price and availability lists, but few have price information
- few California listings in each document

CALIFORNIA AND ALAMEDA COUNTY LEGISLATION**Alameda County Source Reduction and Recycling Board**

777 Davis Street, Suite 200

San Leandro, CA 94577

Contact: Bruce Goddard, Public Affairs Manager

510-614-1699 FAX 510-614-1698

Cost: free

- for Alameda County Waste Management Authority member agencies only
- status of current initiatives regarding procurement-related legislation
- existing laws and regulations

California Integrated Waste Management Board (CIWMB)

8800 Cal Center Drive
Sacramento, CA 95826
Contact: Public Affairs Office
800-553-2692 916-255-2296

Cost: free

- general information and CIWMB initiatives available to everyone
- Summary of California Minimum Recycled Content Laws
- California Integrated Waste Management Board Statutes
 - updated annually
 - all statutes administered by CIWMB
 - most useful to legislative scholars

California Legislative Bill Room

State Capitol - Room B-32
Sacramento, CA 95814
916-445-2323 FAX for paying customers only

Cost: free

- for copies of California State legislation available to everyone
- all legislation for past two sessions (4 years)
- must know bill number

Infocycle BBS - 916-445-0518

Division of Recycling
Department of Conservation (DOC)
Sacramento, CA
Contact: Josh Tooker, Sysop
916-445-1490

Cost: free

- includes File (#34) Public Procurement - text of state procurement laws pertaining to local governments, the legislature, and CSU and UC.

SPECIFICATIONS AND STANDARDS**American Society of Testing and Materials (ASTM)**

100 Bar Harbor Drive
West Conshohocken, PA 19428-2959
610-832-9585 FAX 610-832-9555

Cost: various

- voluntary consensus standard-making organization
- standards are available individually or in book form
- specifications and test methods for many products and materials
- some have been revised for recycled content, particularly for plastics
- use caution when referencing ASTM standards for paper; some allow recycled paper but key recycled terms may mean very different materials than you expect
- order by number or speak to committee staff manager for advice

Usefulness: High for technical specification and testing personnel

REPORTS AND CASE STUDIES

This section includes a selection of exceptional studies on relevant issues. These reports contain case studies, recycled product descriptions and policy initiatives. This listing is by no means complete.

Florida Minimum Recycled Content Technical Study

Bureau of Standards, Division of Purchasing
Department of Management Services
4050 Esplanade Way
Tallahassee, FL 32399-0950
Contact: Edgar C. Sites
904-487-3833 FAX 904-487-2442

Cost: \$45 hard copy,
\$15 diskette

- October, 1994
- recommended minimum recycled content standards and purchasing goals for products from glass, plastic, paper, newsprint, steel, aluminum and re-refined oil
- based on surveys of state purchases and technical information about product types and market data for the Southeast
- diskette in DOS WordPerfect 5.0
- useful as background information about products

Usefulness: High to product researchers, Medium to purchasers

**A Model for a Comprehensive
Waste Reduction Procurement Program**

City of Tucson Solid Waste Management
PO Box 27210
Tucson, AZ 85726-7210
520-791-3106 FAX 520-791-4155

Cost: \$20 report,
\$15 appendix,
inc. shipping

- April, 1994
- guide to implementing a source reduction - recycled product procurement program using Tucson circumstances as examples
- procurement review process
- source reduction and recycled product purchasing practices
- purchasing clauses, policies and certification procedures, record keeping practices
- product specification review and test methods: auto parts, compost, construction aggregates, insulation, office supplies, lubricating oil, paper packaging, paper products, plastic products, solvents, tires
- up to 2 copies of executive summary sent for free
- appendix of specifications is limited

Usefulness: High for procedures and most product information

**An Ounce of Prevention:
Strategies for Cutting Packaging Waste**

Californians Against Waste Foundation
926 J Street, Suite 606
Sacramento, CA 95814
916-443-8317 FAX 916-443-3912

Cost: \$10 (or included
with Buyers Guide, see
"Printed General Product
Directories - State and
Regional")

- 1994
- strategizes packaging waste reduction through procurement approaches and recycled content
- many innovative corporate examples

- a “brainstorming” manual for reducing packaging waste
- includes specific focus on waste prevention through procurement decisions

Usefulness: High

U.S. Conference of Mayors “Buy Recycled” Campaign

1620 Eye Street NW
Washington, DC 20006
Contact: Alisa Stone
202-293-7330

Cost: free

- short reports on specific recycled product categories, including:
 - retread tires
 - re-refined oil
- vendor listings in some cases

Usefulness: High for an overview of the product categories

WASTE EXCHANGES

Waste exchanges are sources for recycled or reused materials that may meet materials specifications for certain government operations. Chemicals and construction materials are key examples.

CALMAX BBS - 916-448-0615

California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, CA 95826
916-255-2369

Cost: free

- updated weekly
- “waste” exchange
- reusable non-hazardous items, including construction, furniture, office products, paint and many others, that otherwise would have been discarded but are available to interested users
- everything listed is either free or at nominal cost
- search by goods offered, items desired, type of item, and region

Usefulness: High

CALMAX (printed catalog)

California Integrated Waste Management Board
8800 Cal Center Drive
Sacramento, CA 95826
916-255-2369

Cost: free

- bimonthly printed catalog
- “waste” exchange
- reusable non-hazardous items, including construction, furniture, office products, paint and many others, that otherwise would have been discarded but are available to interested users
- everything listed is either free or at nominal cost
- listings by goods offered, items desired, and regional

Usefulness: High

COMPOST**USE GUIDELINES AND TEST METHODS****California Compost Quality Standards**

California Compost Quality Council
c/o Sonoma Compost Company
550 Meham Road
Petaluma, CA 94942
707-664-9113 FAX 707-644-1943

Cost: free

- August 28, 1995, updated periodically
- voluntary guidelines for compost producers
- establishes basic methodology, monitoring and disclosure parameters
- states the types of data to be provided to compost users
- establishes requirements for weed viability, pathogens, trace element limits, inspection, sampling and product information
- establishes basic contaminant parameters

Usefulness: High - producer and user information parameters

Composting Regulations**California Code of Regulations****Title 14, Division 7**

California Integrated Waste Management Board
Permitting and Enforcement Division
Permits Branch
8800 Cal Center Drive
Sacramento, CA 95826
Contact: Maria Pires
916-255-2453 FAX 916-255-4071

Cost: free

- effective July 31, 1995
- regulations for composting facilities and basic quality requirements, see:
 - Section 17868.1 sampling requirements
 - Section 17868.2 maximum metal concentrations
 - Section 17868.3 pathogen reduction
 - Section 17868.4 clean green material processing requirements

Usefulness: High - minimum state requirements

Suggested Compost Parameters and Use Guidelines

The Composting Council
114 South Pitt Street
Alexandria, VA 22314
703-739-2401 FAX 703-739-2407

Cost: \$20
non-members

- qualified and quantified parameters for compost
- uses: blended topsoil, amendment for marginal soils, planting beds, garden and plant mulch, horticultural substrate, reforestation, turf establishment, crop production, sod growing media and erosion control
- sample technical data sheet
- summary of sewage sludge regulations
- selected soluble salts tables

Usefulness: High - specification guidance for contracts

PUBLICATIONS - COMPOST**BioCycle Journal of Composting and Recycling**

419 State Avenue
Emmaus, PA 18049
610-967-4135

Cost: \$63 per year

- monthly magazine
- strong and comprehensive emphasis on all types of composting
- also includes articles on recycling issues other than composting

Usefulness: High

Various Documents

The Composting Council
114 South Pitt Street
Alexandria, VA 22314
703-739-2401 FAX 703-739-2407

Cost: various

- This membership trade association publishes a wide range of documents, literature reviews and fact sheets. Ask for their publications list. Prices to non-member organizations range from free - \$50. Examples:
 - Potential U.S. Applications for Compost
 - Uses and Benefits of MSW Compost: A Literature Review
 - Principles of Good Composting Process Regulations
 - Compost Standards (summary of state standards for heavy metals, etc.)
 - Cumulative Loading (summary of effects of repeated applications)

Usefulness: Depends on the needs of the users

BUILDING AND CONSTRUCTION PRODUCTS**PRODUCT SOURCE LISTS****ON-LINE**

To dial into an on-line Bulletin Board System (BBS), use a modem with applicable modem (terminal) software. The BBS listings below include the modem-access phone number. The BBS then appears as screens on your computer.

Viewing an Internet web site requires a World Wide Web browser and access to the Internet through an Internet service provider or an institutional connection. (Some governments and universities are connected.) The provider will set up an account with a modem-access phone number. Some providers give or sell account-holders appropriate browser software to use with their service. Uniform Resource Locators (URL — Internet web site addresses such as “http://www. . . .”) are given below at relevant listings.

National Park Service’s Sustainable Design and Construction Database

<http://www.nps.gov/dsc/dsgncnstr/>

National Park Service

PO Box 25287

Denver, CO 80225

Contact: Technical Information Center

(requests no phone calls) FAX 303-969-2557

- updated periodically, current release October, 1995
- approximately 1,300 products rated for 14 environmental factors, including recycled content, from over 550 manufacturers
- sort by product brand, manufacturer name, manufacturer plant location, CSI section, keyword search, or any combination

Usefulness: High

DATA BASE ON DISK**EcoLiving Sourcebook 1.1: The Digital Guide to Recycled Content Building Products**

EcoLiving International

110 Linden Street

Oakland, CA 94607

510-452-0500 FAX 510-444-0434 e-mail: EcoLiving@ AOL.com

Cost: \$39.00 inc. shipping,
free to Alameda County
residents - see notes

- 1995
- self-run software catalog presenting building products and furnishings made from recycled materials
- over 500 national listings from 80 companies
- includes descriptive and technical information, including descriptions, content percentages, test results, specifications, distributors, and pictures
- company data and product descriptions in two files which must be accessed separately
- difficult to search entire data base for all examples in a product category
- requires 386 computer or higher, 4 MB RAM, hard disk with 8 MB available memory, Microsoft Windows v. 3.1, mouse, 3.5” floppy disk drive
- Alameda County residents can get a free copy while supply lasts by calling Wendy Sommer, Alameda County Source Reduction and Recycling Board, 510-614-1699.

Usefulness: Medium

The Harris Directory

c/o A. Summers
1005 East Alameda
Santa Fe, NM 87501
505-995-0337

Cost: \$69 annual
subscription,
\$45 annual renewal
plus shipping

- updated twice a year, current version September, 1995
- format: self-run database, no software needed
- disk in several DOS and Mac formats
- listings by Construction Standards Institute divisions
- annual subscription includes updates after 6 months
- over 3,500 national product listings from over 1,000 manufacturers
- sortable by state and city
- all product listings certified by compiler
- recycled content and other environmental attributes if known

Usefulness: High - numerous certified listings, self-run software, low cost

National Park Service's Sustainable Design and Construction Database

National Park Service
PO Box 25287
Denver, CO 80225
Contact: Technical Information Center
(requests no phone calls) FAX 303-969-2557

Cost: Free while supply
lasts, then nominal cost

- updated periodically, current release October, 1995
- requires 5MB hard disk space, 8 MB RAM, Windows
- approximately 1,300 products rated for 14 environmental factors, including recycled content, from over 550 manufacturers
- sort by product brand, manufacturer name, manufacturer plant location, CSI section, keyword search, or any combination

Usefulness: High

PRINTED DIRECTORIES**ADPSR West Coast Architectural Guide
with Information Sheets**

Architects/Designers/Planners for Social Responsibility
NorCal Chapter
PO Box 9126
Berkeley, CA 94709-0126
510-273-2428 pre-recorded information

Cost: \$12

- updated every six months
- diskette version due early 1996
- listing of building products, services and resources in CSI format
- narrative discussion of materials, techniques and alternatives
- information sheets have bibliographies and resource lists for topic

Usefulness: High for local architects and engineers

Guide to Efficient Building Elements (GREBE)

Center for Resourceful Building Technology
PO Box 100
Missoula, MT, 59806
406-549-7678 FAX 406-549-4100

Cost: \$28,
inc. shipping

- updated periodically; latest June, 1995
- format: bound, soft cover
- over 400 national manufacturer listings
- arranged by building functions and indexed by company
- descriptions of environmental attributes
- no recycled content percentage information
- product, use and builders' specification data included per product

Usefulness: High - current information and excellent product descriptions

Interior Concerns Resource Guide

Interior Concerns Publications
P.O. Box 2386
Mill Valley, CA 94942
415-389-8049 FAX 415-388-8322

Cost: \$40, plus 7.5% sales
tax in CA

- July, 1995, periodically updated
- interior and exterior environmentally sensitive products in CSI format
- recycled and many other environmentally sensitive issues
- includes interior products such as carpet, padding, fabrics, furnishings, and paint as well as many recycled construction products

Usefulness: High for construction personnel and remodeling projects

McRecycle USA Registry Service

McDonald's Corporation
Environmental Affairs
Kroc Drive
Oak Brook, IL 60521
800-220-3809 FAX 908-719-9340

Cost: single copy free

- updated periodically; latest August, 1995
- over 900 national product listings from over 500 manufacturers
- listed by Construction Standard Institute product divisions
- manufacturers provide data which is not verified
- some products not available to buyers of small quantities
- no geographic listings
- some recycled content information is outdated

Usefulness: Medium - low cost, many listings but not all are useful

Recycled-Content Building and Construction Products

Clean Washington Center
WA Department of Trade & Economic Development
2001 Sixth Avenue, Suite 2700
Seattle, WA 98121
206-464-7040 FAX 206-464-6902

Cost: \$20

- updated periodically; latest January, 1994
- format: bound, soft cover

- arranged by Construction Standards Institute outline
- national listings, mostly Washington companies, indexed by product and company
- pre- and post-consumer recycled content information only

Usefulness: Medium - dated, number of listings per product is limited

A Resource Guide to Recycled Construction Products and Energy Efficiency

LA Network
Integrated Solid Waste Management Office
City Hall East
200 North Main Street, Room 580
Los Angeles, CA 90012
213-237-1444 FAX 213-237-1445

Cost: free

- revised May, 1993
- listing of manufacturers and distributors, many in northern California
- includes description of products with information on recycled content, environmental aspects, and tips on use and testing

Usefulness: High

A Resource Guide to Recycled-Content Construction Products

LA Board of Public Works
Integrated Solid Waste Management Office
200 North Main Street, Room 580
Los Angeles, CA 90012
213-237-1444 FAX 213-237-1445

Cost: free

- April, 1995, periodically updated
- interior and exterior products in CSI format
- useful introduction and resource listings

Usefulness: High for CA construction personnel

Resource Guide to Sustainable Landscapes and Gardens

Environmental Resources, Inc.
2041 East Hollywood Avenue
Salt Lake City, UT 84108-3148
801-485-0280 FAX 801-485-0280

Cost: \$37.50,
inc. shipping

- updated annually; latest May, 1995
- more than 1100 national listings of sustainable products and information sources ranging from recycled products to heirloom seeds
- CSI format by product type
- other chapters describe: energy and water conservation, maintenance and management, environment and health, site preparation, C&D waste management

Usefulness: High - landscaping focus is unique

PUBLICATIONS - BUILDING AND CONSTRUCTION

Magazines and newsletters that focus specifically on building and construction products are listed in this section. Many of the general product publications include information about construction products as well.

California Integrated Waste Management Board (CIWMB)

8800 Cal Center Drive
Sacramento, CA 95826
Contact: Hotline Coordinator, Office of Public Affairs
1-800-553-2962

Cost: free

- provides building and construction information, including:
 - Construction/Demolition Recyclers - Processors and Receivers
 - Recycled Aggregate Fact Sheet
 - Waste Exchanges Fact Sheet

Environmental Building News

RR 1 Box 161
Brattleboro, VT 05301
802-257-7300 FAX 802-257-7304

Cost: \$67 annual
subscription

- bi-monthly newsletter
- focus: building architects, engineers and other practitioners
- feature articles on product types and attributes, environmental issues, and construction techniques for buildings
- no roadway or bridge coverage
- information sources
- news briefs on new products, issues, government initiatives
- events listing

Usefulness: High - excellent coverage and response to reader needs

Interior Concerns Newsletter

Interior Concerns Publications
P.O. Box 2386
Mill Valley, CA 94942
415-389-8049 FAX 415-388-8322

Cost: \$30, plus 7.5% sales
tax in CA

- bi-monthly newsletter
- articles about environmentally sensitive construction issues

Usefulness: High for construction personnel seeking more than recycled content

REPORTS, CASE STUDIES, GUIDELINES**Construction and Demolition Waste
in Alameda County Appendices**

Alameda County Waste Management Authority
777 Davis Street, Suite 200
San Leandro, CA 94577
510-614-1699 FAX 510-614-1698

Cost: Free

- November, 1992
- Report is outdated but appendices contain useful details about use of C&D materials
- includes contacts, glossary, bibliography, relevant legislation and sample aggregate qualification tests

Usefulness: Medium - sound information but may be outdated

Building For Tomorrow

Alameda County Waste Management Authority
777 Davis Street, Suite 200
San Leandro, CA 94577
510-614-1699 FAX 510-614-1698

Cost: Free

- March, 1995
- periodically updated pamphlet
- reuse and recycling directory for C&D material service providers in Alameda County
- lists materials accepted for recycling
- some service providers sell products

Usefulness: High for preliminary search of local sources

Building Less Waste Guide

Alameda County Source Reduction and
Recycling Board

777 Davis Street, Suite 200
San Leandro, CA 94577

Contact: Program Staff

Author: Architects, Designers, Planners for Social Responsibility (ADPSR)
510-614-1699 FAX 510-614-1698

Cost: to be announced

- to be published in 1996
- intended as a companion to *Green Spec* (see listing above)
- a tool to aid builders, architects, designers and project managers in their selection of resource efficient building materials
- informs users about choices that will result in prevention or reduction of construction/demolition debris generated on-site
- detailed discussion of options and their consequences for specific parts of buildings such as roofs
- available both in print and on diskette

Usefulness: Presumed High

Glass Feedstock Evaluation Report

Clean Washington Center, ATT: Reports
2001 Sixth Avenue, Suite 2700
Seattle, WA 98121

Author: Dames & Moore, Inc.

206-587-5520 FAX 206-464-6902

Cost: \$20 each

- 1993
- five reports on engineering and environmental properties of glass used as an unbound aggregate substitute:
 - Testing and Design
 - Environmental Suitability Evaluation
 - [Crushing] Equipment Evaluation
 - Engineering and Suitability Evaluation
 - Final Feedstock Evaluation
- engineering properties fully evaluated
- quality and minimum/maximum standards established for a wide variety of aggregate uses

Usefulness: High for engineers and planners

Green Spec

Alameda County Source Reduction and
Recycling Board

777 Davis Street, Suite 200
San Leandro, CA 94577

Contact: Program Staff

Author: Larry Strain, Siegel & Strain Architects
510-614-1699 FAX 510-614-1698

Cost: to be announced

- to be published in 1996
- specifications for environmental/sustainable design and resource efficient building material and methods
- addenda to standard set of building specifications for residential building materials
- criteria include: recycled and durable materials, more efficient material use, sustainable sources of materials and re-use of buildings and building components

Usefulness: Presumed High

Improving Residential Sand-Filter Sewage Treatment Systems Using Crushed Glass

Clean Washington Center, ATT: Reports
2001 Sixth Avenue, Suite 2700
Seattle, WA 98121

Cost: Free

Authors: Franz E. Koch, PE, and Bill Stuth, Sr.
206-587-5520 FAX 206-464-6902

- 1995
- two case studies with engineering details
- promising results of experimental projects
- research continues

Usefulness: High for engineers and planners

WasteSpec: Model Specifications for Construction Waste Reduction, Reuse and Recycling

Triangle J Council of Governments
PO Box 12276
Research Triangle Park, NC 27706

Cost: \$20, incl. shipping

Authors: Judy Kincaid, Cheryl Walker, Greg Flynn
919-358-9343 FAX 919-549-9390

- 1995
- three-ring binder with diskette, 114 pages
- Construction Specifications Institute format
- solid waste management planning
- reduction, reuse and recycling planning for construction projects
- drop-in specification language for existing boilerplate
- prepared by architects and lawyers
- reviewed by national experts before publication
- when ordering, specify WORD-DOS, WORD-MAC, or WORDPERFECT-DOS

Usefulness: High - user-friendly method to adapt construction contracts

END

The Alameda County
Source Reduction and Recycling Board

The Alameda County
Source Reduction and Recycling Board

RESOURCEFUL PURCHASING

A Hands-On Buyers Manual

RESOURCEFUL PURCHASING

A Hands-On Buyers Manual

MARKETS FOR RECYCLED PRODUCTS

April, 1996

MARKETS FOR RECYCLED PRODUCTS

April, 1996

The Alameda County
Source Reduction and Recycling Board

The Alameda County
Source Reduction and Recycling Board

RESOURCEFUL PURCHASING

A Hands-On Buyers Manual

RESOURCEFUL PURCHASING

A Hands-On Buyers Manual

MARKETS FOR RECYCLED PRODUCTS

April, 1996

MARKETS FOR RECYCLED PRODUCTS

April, 1996

CHAPTER 15

Recycled Product Examples
Trash Can Liners

The Alameda County
Source Reduction and Recycling Board

The Alameda County
Source Reduction and Recycling Board

RESOURCEFUL PURCHASING

A Hands-On Buyers Manual

RESOURCEFUL PURCHASING

A Hands-On Buyers Manual

MARKETS FOR RECYCLED PRODUCTS

April, 1996

MARKETS FOR RECYCLED PRODUCTS

April, 1996

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

**RESOURCEFUL
PURCHASING**

INTRODUCTION

POLICY AND IMPLEMENTATION

FEDERAL & STATE REQUIREMENTS

MEASURE D REQUIREMENTS

DEFINITIONS

RECYCLED CONTENT STANDARDS

PRICE PREFERENCES

BID & CONTRACTING PROCEDURES

MEETING USERS' NEEDS

MONITORING TOOLS

LOCATING SUPPLIERS

COOPERATIVE PURCHASING

SOURCE REDUCTION

**RECYCLED PRODUCT
OPPORTUNITIES**

RECYCLED PRODUCT EXAMPLES

APPENDIX I

SUMMARY OF CLAUSES

APPENDIX II

RESEARCH SOURCES

APPENDIX III

RESOURCES