

THE WHITE HOUSE
WASHINGTON

September 24, 1993

MEMORANDUM FOR BRIAN BURKE, TOM EPSTEIN, T.J. GLAUTHIER, SALLY KATZEN, ALICE RIVLIN, BOB SUSSMAN, JOE STEIGLITZ, TRACY THORNTON, BOB WATSON, PETER YU

FROM: KEN CONNOLLY

SUBJECT: EXECUTIVE ORDER ON FEDERAL ACQUISITION, RECYCLING, AND WASTE PREVENTION

Attached please find responses to the questions on the recycled paper content standards. As you know, representatives from industry, unions, the cities and environmental groups have been invited to the White House discuss these responses. The meeting will take place on Monday September 27, 1993 from 10:30 A.M. to 12:00 P.M. in room 248. The following representatives will be in attendance:

<u>Name</u>	<u>Organization</u>
Red Caveny, President	American Forest and Paper Association
Richard Goodstein, Vice President	Browning Ferris Industry
Allan Davis, President	Conservatree Paper Company
John Ruston, Senior Economist	Environmental Defense Fund
Dave Modi, Director Gov't Affairs	Georgia Pacific
Katie Kutler, Communications Director	James River Paper Corporation
Allen Hershkowitz, Senior Scientist	Natural Resources Defense Council
William Stout, Vice President	United Paperworkers International Union
David Gatton, Senior Advisor	U.S. Conference of Mayors

Please review the materials attached prior to the meeting. If you have any questions or need additional information, please call me at 456-6224.

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM AMERICAN FOREST
PAPER ASSOCIATION**

September 24, 1993



EXECUTIVE OFFICE OF THE PRESIDENT

COUNCIL OF ECONOMIC ADVISERS

WASHINGTON, D.C. 20500

MEMBER

September 28, 1993

MEMORANDUM FOR ✓ BRIAN BURKE, KEN CONNOLLY, TOM EPSTEIN, T.J. GLAUTHIER, SALLY KATZEN, ALICE RIVLIN, BOB SUSSMAN, TRACY THORNTON, BOB WATSON, PETER YU

FROM: JOE STIGLITZ 

SUBJECT: EXECUTIVE ORDER ON FEDERAL ACQUISITION, RECYCLING AND WASTE PREVENTION

We would like to make three general points following yesterday's discussion of the proposed Executive Order on recycled content of federal paper purchases.

1. Defining a standard in terms of the percentage of total over-issue plus post-consumer fiber content should accomplish the aim of increasing use of recycled fiber at a lower cost.

- All concerned agree that trim and scrap from paper manufacture is and will continue to be re-used fully regardless of recycled content standards.
- Printed over-issue is currently used for the same purposes as recovered municipal waste paper, i.e., tissue, paperboard and other lower-value paper products if recycled, landfill if not. According to EDF, only 62% of over-issue is currently recycled, with the remaining 38% contributing to the nation's solid waste disposal problems.
- Over-issue and office waste paper are better suited to printing and writing (P&W) paper manufacture than mixed paper waste from municipalities. Including over-issue in the recycled content definition should allow P&W makers to increase recycled content at a lower cost.
- Use of over-issue by P&W manufacturers will result in increased demand for municipal mixed waste paper for use in lower-value paper products, helping alleviate the municipal waste disposal problem.

2. Meeting a standard for deinked fiber content above 10% in federal purchases is likely to be expensive. At the very least, we should offer price premiums that increase with deinked fiber content rather than mandate a flat standard for deinked fiber (or post-consumer) content.

- Paper meeting these specifications will continue to be produced mainly by small- to medium-sized non-integrated mills whose production costs are higher than those of large, integrated mills.

○ There is no reason to believe that the cost of producing this paper in small- to medium-sized non-integrated mills will fall as the market expands. Just the opposite: These operations are likely to experience diseconomies of scale due to decreases in average quality of pulp or increases in pulp cost due to increasing transportation cost, which would increase the average cost of production, thereby increasing the cost of meeting a federal standard.

○ The GPO reports that it pays a 16% premium for 40/10 recycled copier paper. Others have reported paying lower price premia at present. However, the likelihood of diseconomies of scale suggest that price premia will persist and possible increase in the long run.

○ Giving preference to higher deinked fiber (or post-consumer) content and offering to pay, say, up to 5% extra for paper with 15% post-consumer content, 10% extra for paper with up to 20% post-consumer content, etc. will limit the costs of addressing the municipal waste problem.

○ Environmental organizations claim that it will be no more costly to produce P&W paper with 15-20% post-consumer content than from virgin pulp. If they are correct, then this preference policy will achieve the same results as a standard for federal purchases. The price risk to the government will simply be lower.

3. A voluntary agreement by paper manufacturers to use the equivalent of 10% over-issue plus post-consumer fiber in 50% of their production is likely to accomplish the goal of increasing demand for municipal paper waste more efficiently than a standard for post-consumer content of federal purchases.

- The higher cost of P&W paper produced by small- to medium-sized non-integrated mills will continue to limit the growth of demand for paper with deinked fiber content.

- Increased production of P&W paper with recycled fiber content at large, integrated mills will result in lower prices for paper with deinked fiber and thus greater increases in demand for deinked fiber.

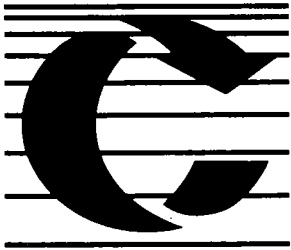
- These mills operate closed systems in which waste material from processing wood is used to generate energy. Increases in recycled fiber content reduce the use of waste material for energy generation, thus increasing production costs. As the share of recycled fiber increases, mills are increasingly unable to take advantage of the cost savings of a closed system; thus, marginal cost increases sharply.

- Paper with 10% deinked pulp will cost about the same to produce as paper from virgin pulp. According to the industry, when mills purchase deinked fiber from outside sources, marginal cost increases rapidly after deinked fiber content

exceeds 10%. (Mills that integrate deinking and pulping into their operation would have marginal costs increasing rapidly after 15%, but very few mills have integrated deinking and pulping facilities at present.)

- Large integrated mills account for two-thirds of P&W capacity. Even small increases in the use of over-issue and post-consumer fiber at every mill would amount to a large increase in total deinked fiber use.
- A voluntary agreement to produce 50% of total P&W paper with 10% over-issue plus post-consumer content would represent a much larger increase in the use of deinked fiber than a federal purchasing standard.
- Such a voluntary agreement could be revisited in a few years with an eye toward renegotiating deinked fiber content upward. The industry expects to experience sufficient learning-by-doing within a few years to make investment in integrated deinking and pulping facilities attractive.
- A voluntary agreement is likely to create more jobs than a federal purchasing standard. The main growth in employment will come from deinking and pulping facilities rather than new paper mills. Demand for deinked pulp is ought to be higher under the type of voluntary agreement we propose, creating a greater incentive for investment in deinking facilities and thus in employment.

Brian Burke
Rm. 210



Conservatree Paper Company

Environmentally Sound Paper

To: Ken Connolly, White House Environmental Policy Office
From: Alan Davis, President, Conservatree Paper Company
Re: Questions Concerning Recycled Paper
Date: Friday, September 23, 1993

Thank you very much for inviting me to participate in the roundtable discussion regarding the content standards for federal procurement of recycled printing and writing paper.

All of the significant issues listed in "Questions Regarding Recycled Paper" are addressed in our memorandum, "Agenda 2000: An Effective Recycled Paper Procurement Policy", submitted to your office last June. We attach a copy for your reference.

Conservatree has had seventeen years of experience in every aspect of the recycled paper business. Our perspectives are unique due to the role we have played in creating a market for recycled printing and writing paper. We have been on the front lines with recyclers, paper manufacturers, distributors and, most importantly, consumers, including the federal government and its state counterparts throughout the country.

The following summarizes our concerns, and responds directly to the specific issues your office now raises. It is based on the assumption that the underlying goal of the White House is to maximize postconsumer consumption so as to make substantial reductions in the twenty million tons of printing and writing paper that annually goes to landfills and incinerators.

Definition:

The more than six dozen businesses, government agencies and organizations which have endorsed the "Mobro Principles" agree that a two-part standard (requiring a percentage of both postconsumer and total recycled content) is the best way to maximize diversion from dumps and incinerators without disrupting existing markets for preconsumer materials. It guarantees that: 1) not less than 50% of the paper fiber is derived from recycled materials; 2) at least some postconsumer material is used; and 3) allows industry flexibility in determining how best to meet the recycled content requirements based on economic and market factors.

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However, in the spirit of compromise and cooperation, we will accept a postconsumer-only standard, but only if the percentage content requirement is high enough to have an impact on solid waste reduction and consumers are not misled about the recycled content.

A 1992 survey conducted by Conservatree Information Services and the National Association of State Purchasing Officials demonstrates that many states already have procurement policies consistent with the standards and definitions we propose.

Whatever standard is chosen, definitions of the term "recycled" must be sufficiently narrow to encourage demand for materials that are not currently being reused. This would be consistent with the positive steps the U.S. government has already taken through the Federal Trade Commission (FTC) guidelines. The paper industry terminology of "processed recovered fiber" is probably inconsistent with the FTC approved definition of "recycled" and definitely violates the spirit of those guidelines, which emphatically distinguish the term "postconsumer" to protect its integrity.

Capacity

It has already been demonstrated that papers in Scenarios "A," "B" and "C" can all be made on small paper machines. Since the federal government only purchases one percent of the nation's total output of printing and writing stock, the entire supply could be met using existing equipment. Capacity constraints are not a significant factor.

The ability to meet similar standards on large paper machines is a function of management commitment, not technology. Based on our experience of introducing to market virtually all the new grades of recycled paper created in the past decade and a half, the industry is technologically capable of manufacturing virtually any printing and writing product, for which there is adequate demand, from twenty percent or more postconsumer material.

Jobs

Since no company is forced to bid on federal contracts, no mill will be required to change its production processes. Thus, there should be no dislocation within the segment of the pulp and paper industry.

If the total percentage of fiber coming from postconsumer sources increases, there may be some job loss among timber harvesters. However, that should be

more than offset by an employment increase in occupations which collect and process materials now part of the solid waste stream.

Across the country, from Seattle to Boston, many municipal recycling programs are in severe trouble due to lack of markets for the materials they have collected. Employees are being laid off as revenues from diverted materials decline. Increasing the demand for postconsumer paper will reverse this trend and lead to additional positions being created – in this sense, a strong federal recycled paper procurement standard is a job creation program.

Costs

The price of recycled paper, like any other commodity, is a function of the intersection of supply and demand at a specific point in time. The precise additional cost, if any, at some future date can not be accurately projected, since it depends on factors in the larger marketplace, such as the overall level of economic activity (and, hence, of paper consumption).

A rough estimate is possible, however, based on the recycled paper procurement programs of several large states which have been in operation over the last decade. In New York, for example, which has a price preference for recycled paper (along with relatively tough standards and definitions), the additional cost has been on the order of 2-3%.

The cost to manufacture recycled pulp has always been, over an extended period of time, competitive with virgin pulp production. The cost differentials between recycled and virgin paper is solely the result of the paper industry investing almost exclusively in integrated virgin paper mills over the last decade.

Estimated expansion of paper production capacity over the next decade could meet projected future demand for recycled paper. Federal government guidelines for postconsumer standards set at reasonable percentage requirements could stimulate future investment into cost-competitive recycled paper.

A significant increase in aggregate demand for recycled paper would lead manufacturers to shift production to larger, state-of-the-art, paper machines. This should, in turn, reduce or eliminate any cost differentials due to economies of scale.

Incentives

We have previously explained that a ranking system is the best way to create incentives for consumers to purchase (and, thus, mills to manufacture) papers with higher percentages of recycled content. Absent that sort of formula and labeling scheme, a standard which begins at fifteen percent or higher and escalates over time may encourage additional mills to convert existing paper machines or add new capacity to utilize recycled fibers.

A ten percent postconsumer standard, as in Scenario A, would produce negative incentives for the production of additional recycled printing and writing paper since it is lower than the level already obtainable in the marketplace. In fact, it is inferior to the requirements of both Canada and the state of California. This proposal would be a step backwards, and the death of paper recycling in the United States.

If we are to have a postconsumer-only standard, only Scenario C of the options presented provides adequate incentives to move the paper industry forward. Even then, the Administration should go on record supporting an immediate fifteen percent postconsumer content standard. Anything less would fall short of the Clinton-Gore campaign's commitment to building a recycling economy.



Despite tremendous public interest and concern, recycling programs are on the verge of collapse due to insufficient markets for the collected wastepaper. Federal government leadership is the only way to turn this situation around. Scenario C, with the addition of an immediate fifteen percent postconsumer content standard, is the sole option that meets this test.

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Fact Pack 6:3 Abstract
May/June 1993
Special Issue: \$25.00
Editor: David Assmann

This entire issue is a comprehensive report on the state of paper recycling prepared for the White House Office of Environmental Policy (The annual product guide will be mailed to you as part of the Sept/Oct Fact Pack). This report was designed to provide input as White House staff prepares an Executive Order for federal government procurement of recycled paper.

6:3:1 Feature: Agenda 2000 - An Effective Recycled Paper Procurement Policy

- U.S. recycled paper policy is at a crossroads. In large part due to the lack of Federal Government leadership, three facilities recycling fiber for printing and writing paper have closed this year. In 1992, 440,000 tons more wastepaper was collected than the nation can now reuse. One result is increased pressure on landfills. Nearly two-fifths of the municipal waste stream consists of paper products, and more than a third of that is printing and writing paper.
- The major reason why more paper waste is not reused is a lack of markets for recycled printing and writing paper. Due to inadequate demand, manufacturers have not invested in the equipment necessary to produce recycled paper from postconsumer waste. Only 6% of the fiber in printing and writing paper is now diverted from the waste stream.
- Clear definitions and meaningful content standards for recycled paper procurement are the keys to increasing demand. Currently, some papers labeled "recycled" do not include any postconsumer materials.
- The Federal Government is in a position to significantly boost the national level of demand for recycled paper both directly through its own purchases and indirectly in its role as a model for state and private sector procurement.
- A two-tier procurement standard setting minimum levels of both total recycled and postconsumer content is the best way to reduce the volume of paper headed to landfills and encourage additional manufacturing investment without disrupting existing markets for waste paper.
- The American Forest and Paper Association proposal for Federal recycled paper procurement would be a step backward because it does not require a sufficient volume of total recycled content and it does not require any postconsumer waste in paper labeled recycled.
- As the evaluation of six competing standards makes clear, the Mobro Principles standards and definitions offer the most realistic and most effective route to stimulate the development of a recycling economy. These principles should form the framework for a new Federal recycled paper procurement policy.

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100% total recycled fiber
15% postconsumer fiber

EXECUTIVE ORDER:
FEDERAL ACQUISITION, RECYCLING AND WASTE PREVENTION

RESPONSES TO QUESTIONS REGARDING RECYCLED PAPER

by the

**Environmental Defense Fund
257 Park Avenue South
New York, NY 10010**

and the

**Environmental Action Foundation
6930 Carroll Avenue
Takoma Park, MD 20912**

September 27, 1993

Responses to Questions Regarding Recycled Paper

John Ruston, Lauren Blum, Barbara Olshansky
Environmental Defense Fund

Resa Dimino
Environmental Action Foundation

Summary

The growth of paper recycling offers Americans a range of benefits, including reduced solid waste disposal costs, savings of water and energy in paper production, reduced pollution from paper manufacturing and disposal, and less demand for turning natural forests and wetlands into tree plantations. This Executive Order offers the administration a chance to lead by example and reap all of these benefits, not by spending more, but by spending more wisely.

In responding to the questions posed by the Office on Environmental Policy, we realize that the economics of paper production and recycling are in a state of transition. Large new supplies of office waste paper are entering the market, new deinking technologies are being commercialized, and consumer demand for recycled content-paper is rising.

In the long run, these technological and economic factors will determine the ultimate quantities of recycled paper production. Whatever standard is chosen for federal purchasing, it will not compel paper producers to make uneconomic investments. As the last five years of recycled paper production under an array of state and federal guidelines has clearly shown, paper manufactures decide whether or not to produce recycled-content paper based on demand from their private customers and the economics of deinking at a particular mill site. The total amount of deinked pulp manufactured is determined by the optimal size of the deinking plant, technical parameters in blending recycled and virgin pulps in the finished paper sheet, the ability to source recovered paper, and the capacity of existing or planned paper machines. The level of the federal standard is used as a guideline in determining the blend of virgin and recycled pulps, but is not the factor that ultimately determines whether or not the deinking plant will be built.

For example, at its mill in Franklin, Virginia, the Union Camp Corporation integrates virgin bleached kraft pulp with 2,000 tons of daily paper production. The company is incrementally increasing the production rates of its paper machines, a step that will require 300 additional tons of pulp per day. Because the marginal cost of producing deinked pulp is substantially lower than virgin pulp, Union Camp is adding a \$108 million deinking line to meet its new needs. Although the average deinked pulp production will thus be about 14% of the mill's overall paper output, on September 12, Union Camp announced at a national meeting of paper merchants that it would be producing printing and writing paper with 25% postconsumer content.¹

If a mill like this chose to blend virgin and recycled pulp at a lower percentage, such as the 10% level suggested by AFPA, it would not change the size of the deinking installation. This step would, however, satisfy a larger increment of consumer demand for recycled paper, making it difficult for another recycled paper producer to serve the same market.

There are now 22 announced plans to build deinked market pulp facilities in the 150 to 600 ton-per-day range in North America.² Obviously not all of these will be built, and a handful of projects have already failed to obtain financing. However, a significant number of these projects are sufficiently along in siting, permitting, and financing that an assertive Executive Order would significantly strengthen their ability to go forward. One developer, who has lenders, equity, permits, and public hearings all either lined up or completed, told us that his potential buyer for the deinked pulp is waiting for the Order to be issued before signing a contract, which is required to close the financing of the plant.³ The effect of a more ambitious standard (e.g., 20% in the near term) in the Executive Order would be to bring more deinking capacity on faster than a weak standard.

One manufacturing job is created for every four tons of daily deinking capacity in operation, and one additional job for is created for every four tons of daily paper processing (sorting and baling capacity) required to furnish a deinking plant. With 25 million tons of printing and writing paper to be consumed annually in the United States by 1995, a significant increase in the amount of deinked pulp used would have a healthy impact in creating high-skilled manufacturing jobs, not counting jobs in construction and affiliated equipment supply industries. Indeed, because industry consolidation and a trend toward larger paper machines eliminated 20,800 manufacturing jobs in the pulp and paper industry in the 1980-1989 period (while total production increased 27%), recycling is perhaps the only net source of new jobs that the paper industry will offer in the 1990's.⁴

I. Definition

Q. What definition of recycled content should the Federal government use in order to ensure the maximum utilization of postconsumer material (pcm)? How does this relate to current practices at the federal, state and local level, and in private paper purchasing initiatives?

A. The Postconsumer Definition Provides the Greatest Incentive for Paper Producers -- Individually and in the Aggregate -- to Remove Material from the Waste Stream

In 1990, 97.6% of paper waste sent to landfills or incinerators came from postconsumer sources (52,690,000 tons per year of postconsumer paper were disposed, compared to 780,000 tons of over-issue paper products and 469,000 tons of converting scrap).⁵ In the same year, less than 28% of postconsumer paper generated was recovered for recycling, compared to 62% for over-issue paper and 94% for converting scrap. (Due to growing demand for over-issue magazines in manufacturing recycled newsprint, Franklin Associates expects the recovery rate for over-issue paper products to be 83% by 1995.)

Clearly, the recovery of additional quantities of postconsumer paper is the only way to relieve the current burden on disposal facilities. Postconsumer fiber is generally more contaminated and less certain in its fiber composition than preconsumer paper across roughly comparable grades. Because of these factors, postconsumer fiber is generally less desired for use by printing and writing paper mills, and tends to sell for less in the recovered paper marketplace (e.g., overissue newspapers have a higher value than newspapers collected from curbside recycling programs).

A strict postconsumer standard provides the greatest credit in the marketplace to mills that make the investment in research and development and technology to recycle difficult-to-process postconsumer paper. Broader definitions of recycled content would create barriers to entry for mills that invest in postconsumer deinking, since under a broader definition the market would recognize no difference between paper made from difficult-to-process postconsumer material and that made from preconsumer material that has been routinely recycled for decades.

Empirical validation of this theory is shown in the recent experience of Ponderosa Fibres of America, Inc. Until 1990, Ponderosa was the only major producer of deinked market pulp in the United States. At four mills, Ponderosa received primarily printed preconsumer material, removed the ink and other contaminants, and sold the end product to tissue mills, and the source of the fiber used was not a concern. In total, the four mills produce roughly 295,000 tons of pulp per year. After 1989, responding to market demand for postconsumer recycled content in printing and writing paper, Ponderosa began intentionally buying postconsumer fiber, and now has shifted 80% of its business to supplying producers of printing and writing grades. Most importantly, Ponderosa had to upgrade its equipment to handle the cheaper but more contaminated postconsumer paper it now receives, investing \$4 million at one facility for new fiber cleaning equipment and installing a new electrical substation and wiring to support a new dispersion unit at another.⁶ Since the overall recycling rate in the United States has grown rapidly since the late 1980's, the preconsumer fiber Ponderosa used to use is now being exported or consumed by other mills, most likely tissue manufacturers. The explicit focus on postconsumer content provided a direct incentive for Ponderosa to effectively reclaim paper waste that a few years ago was going to landfills.

B. The Postconsumer Definition is Well-Established in Federal, State, and Local Law and in the Private Marketplace

For many years, the vast majority of federal, state and local laws and regulations and private market initiatives have used a strict postconsumer definition as the basis for recycled content standards. This has long been viewed as the salient threshold for ensuring the accuracy and significance of claims of "recycled content" made in environmental advertising.

At the federal level, the emphasis on postconsumer materials as the appropriate basis for procurement standards was codified in 1976 in the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 *et seq.* ("RCRA"). Under RCRA Section 6962(c), federal, state or local procuring agencies using federal funds to procure paper products are

specifically enjoined to purchase those products that contain "the highest percentage of postconsumer recovered materials." Following a 1987 lawsuit initiated by the Environmental Defense Fund, the U.S. Environmental Protection Agency (EPA) promulgated federal purchasing guidelines pursuant to this Section. These guidelines specify postconsumer content standards for all grades of paper except for printing and writing papers.

In addition, thirty states currently purchase printing and writing paper with at least ten percent postconsumer content.⁷ Although specific statutory language may vary from state to state, all of the definitions of "postconsumer" are consistent with that set forth in RCRA and specified in the July 6 draft of the Executive Order.⁸ At least 41 local governments specify postconsumer content in the printing and writing paper they purchase as well.⁹

As shown in sections below, the postconsumer definition is the *de facto* standard in the private market. This is in part due to the fact that a number of states have used postconsumer definitions in their environmental labeling laws. For example, in 1990, California adopted a landmark statute in an effort to regulate environmental marketing claims. (California Business and Professions Code Section 17508.5 (West 1988).) The California statute represents an effort to reduce the environmental burdens associated with the production and disposal of consumer products by ensuring that consumers receive truthful, accurate, and significant information on product labels and in advertising. To this end, the statute sets definitional standards for claims of biodegradability and photodegradability, and sets a ten percent minimum postconsumer content standard for products labeled "recycled." Other states have established programs that link postconsumer standards to the use of specific environmental symbols or terms in an effort to create incentives for manufacturers to use greater amounts of postconsumer materials in their recycled products. (See e.g., New York State Department of Environmental Conservation Regulations on Recycling Emblems, 6 New York Code of Rules and Regulations Part 368.)

C. Adopting the Proposed AFPA "Processed Recovered Fiber" Definition Would Be A Great Leap Backward For Recycling

Despite the wide prevalence of the postconsumer definition, the American Forest and Paper Association (AFPA) has put forward a proposal for a new definition, "processed recovered fiber." This new definition does not constructively address the solid waste management problem faced by municipalities in this decade. The Recycling Advisory Council (RAC) analyzed and rejected a similar proposal in 1991. The RAC took this action in part because the classification was so vague and broad that almost every type of paper made could arguably contain some type of "contaminant" that did not in fact pose a major problem in recycling.¹⁰

Under AFPA's assumptions of industry participation, employment of a 10% processed recovered fiber standard would result in the estimated use of recovered fiber by the U.S. paper industry in 1995 of only 1.7 million tons. This amount is *less* than the amount of converting scrap and over-issue material derived from printing and writing paper sources that is projected to be recovered in that year, 1.84 million tons.¹¹ In other words,

AFPA's own 1995 projection for the use of processed recovered fiber could theoretically be met without using any postconsumer paper at all. Such a proposal does not contain sufficient incentive to advance the state of the art in deinking technology or the scope of deinking investment.

Some paper companies have contended that it is impossible or prohibitively expensive to track the use of postconsumer fiber in papermaking, or that a postconsumer definition can be subverted by unethical recovered paper brokers. Neither of these arguments provide a credible reason to change the definition, especially for the production of printing and writing paper, where high quality requirements necessitate careful monitoring of recovered paper entering a mill. Our reasoning is outlined in the endnotes.¹²

II. Capacity

- Q. What capacity constraints, if any, might arise assuming the executive order mandated all agencies to procure recycled printing and writing paper containing the following levels of postconsumer material?

Scenario A: - a 10% pcm standard immediately
 - a 15% pcm standard by January 1996
 - a 25% pcm standard by January 1999

Scenario B: - a 15% pcm standard by January 1996
 - a 25% pcm standard by January 1999

Scenario C: - a 20% pcm standard by January 1995
 - a 30% pcm standard by January 1999

There are essentially no capacity constraints for meeting any of these standards for federal purchasing in the near term (assuming some time for adjustments in government bidding practices and paper manufacturer response). Total federal paper purchasing is estimated at 300,000 tons per year. As discussed in the section below, in the United States there are currently more than 700,000 annual tons of integrated and non-integrated capacity to produce pcm deinked pulp. At a 30% recycled content standard, it would take 76,500 tons of deinked pcm pulp to supply the federal market (assuming that the paper sheet is 85% fiber and that the pcm content is calculated on a fiber weight basis).

The quality of deinked pulp available should also not be a problem. Deinking technology has improved dramatically in the last three years. In addition, the removal of the 50% total recycled content requirement will improve paper quality. This is because most mills obtain preconsumer fiber for meeting the 50% total recycled content requirement by saving and then repulping the unprinted trim from paper converting operations and obsolete or damaged inventory. The cellulose fibers used in paper are like hollow tubes; when dried and repulped they tend to collapse and lose some of their strength and bonding properties. In a deinking operation, the addition of sodium hydroxide in the hydropulper causes the fibers to rehydrate and swell, overcoming this problem. Deinked pulp can thus

have better performance characteristics than pulp obtained from sources that do not require deinking.

Calculating the amount of recovered fiber required under the different scenarios is simply a matter of arithmetic, taking into account that because paper contains 15-30% coatings, filler and sizing, the quantity of deinked pulp required as a percentage of the total weight of the paper is less than the percentage of postconsumer content by measured by fiber weight.

Some paper documents produced by the federal government use groundwood rather than free-sheet paper (e.g., the Congressional Record, Federal Register, income tax preparation manuals and some computer forms). Because there are now more than 30 newsprint or specialty groundwood mills producing paper with recycled content in North America, it would be easily achievable to incorporate recycled content levels of 40% or higher in these documents.

III. Incentives

- Q Will the above listed pcm standards for recycled printing and writing paper create the right incentives to ensure that mills of differing sizes begin to use pcm in the production of paper? Is there a better alternative? (Please complete for each of the above scenarios.)

These questions are very important, and have yet to be fully addressed with clear thinking and assumptions. To answer, we must consider four factors, in sequence:

1. How federal standards are actually considered by buyers and sellers of paper in the private market;
2. Technological and economic trends in the printing and writing paper segment of the United States paper industry;
3. Technological and economic factors with respect to potential recycling investments faced by different types of producers within the printing and writing paper segment of the paper industry, including:
 - non-integrated paper mills currently making virgin paper products
 - integrated virgin pulp and paper mills producing on large scale paper machines
 - integrated virgin pulp and paper mills producing on intermediate and small scale paper machines
 - manufacturers of virgin bleached market pulp;

4. The basis and scope of consumer demand for recycled-content paper in the private marketplace.

Considering the four factors above, it becomes clear that the federal standard (level of recycled content) is not the most important factor in determining whether an individual paper mill installs deinking equipment or buys deinked market pulp. Once the decision to produce recycled-content paper has been made, the federal standard is at best a rough guideline in determining the level used in blending virgin and recycled pulps. The decision to produce paper with postconsumer content varies according to the specifics of the mill. Although many producers may not be able to economically incorporate deinked pulp in the near term, examples exist for mills in each of the four categories above; these are discussed in the sections below.

It is also important to understand that the factors now changing the paper industry are all very new. Deinking systems for removing photocopy and laser-jet printer inks (which are actually plastic polymers bonded to the paper sheet) have been operating at a commercial scale for about two years. Driven by increasing disposal costs, substantial new quantities of waste paper have entered the market since 1988. Adjusted for inflation, recovered paper prices are at their lowest in the post-war history of the industry. The rise of environmental consumerism also dates to about 1989.

It is also clear that in some cases, installing deinking equipment or buying deinked market pulp is a profitable investment for paper producers. By the end of the decade, the effect of the federal standard in the private market will diminish, as deinking technology, fiber supply and the economics of paper production enter into a more stable balance.

A. How the Private Market Responds to Federal Standards

Under the scenario put forward by AFPA, the implicit reasoning is that the recycled-content standard for the federal government's purchasing of paper for its own use will become the *de facto* standard in the private marketplace *at a uniform level*. AFPA assumes that, when determining whether to invest in deinking facilities, paper producers will look at this standard and decide to either produce or not produce paper with recycled content at that level (and, implicitly, at that level only). Therefore, the argument goes, a lower standard will engender greater participation, and possibly greater aggregate use of recovered fiber.

The critical flaw in this argument is the assumption that the federal standard will become the *uniform* standard in the private marketplace. Five years' experience with the current federal purchasing guidelines set by the EPA shows empirically that this is absolutely not the case. In reality, paper manufacturers decide whether or not to produce recycled-content paper based on demand from their private customers and the economics of deinking at a particular mill site. The total amount of deinked pulp used is determined by the optimal size of the deinking plant, technical parameters in blending recycled and virgin pulps in the finished paper sheet, the ability to source recovered paper within the region of the mill (which can be 500 miles or more), and the capacity of existing or planned paper

machines. The level of the federal standard is used as a guideline in determining the blend of virgin and recycled pulps, but *is not the factor that ultimately determines whether or not the deinking plant will be built*. Consider the following examples:

Tissue. The current U.S. EPA standard for postconsumer recycled content in tissue products is 20% for napkins, 40% for paper towels and 20% for bathroom tissue. The Fort Howard Corp. is by far the largest manufacturer of recycled tissue products in the United States. Fort Howard's three large mills consume 1.25 million tons of recovered paper per year and have consistently earned operating profits that are among the highest in the paper industry. In order to penetrate the "at home" market for tissue products, Fort Howard has developed the Green Forest™ brand, which has a minimum of 10% postconsumer content. Serving another market segment, Fort Howard has also developed the Envision™ line of tissue products, which have a minimum of 95% recycled content. Though Fort Howard could produce at the level of the federal standard, their actual production choices appear little related.

Recycled clay-coated folding cartons (e.g., cereal boxes). The EPA guideline for this grade is 80% postconsumer content. In reality, boxboard producers use a relatively wide range of postconsumer content, depending on the manufacturer and mill. Major producers of cereal and laundry detergent like General Mills, Kellogg's and Proctor & Gamble have thus decided to label their recycled cartons "minimum 35% post-consumer content" in addition to labelling the total recycled content.

Paper bags. The current EPA standard for paper packaging, which includes paper bags, is 5% pcm. McDonald's is now using brown, unbleached 100% recycled paper bags with 50% postconsumer content; Burger King is using bags containing 65% recycled postconsumer newsprint and 35% bleached virgin fiber.

Printing and writing paper. The current EPA guideline is 50% "wastepaper" (there is no postconsumer requirement). The standard that has evolved for many paper products in the private market is 50% total recycled content, with 10% postconsumer content. However, there is a wide divergence of grades beyond this 50/10 standard. The paper industry consulting firm Jaakko Poyry Consulting Inc., maintains the Recycled Grade Finder, a comprehensive listing of different brands of recycled-content printing and writing paper that is based on extensive surveys of paper users and producers. The Grade Finder now lists more than 400 different brands of recycled-content paper, including lines produced by all of the major U.S. manufacturers (some of the products are produced by the same mill but distributed under different brand names). The majority of the grades listed have 40% preconsumer content and a minimum of 10% postconsumer content. However, between grades that are 100/0 and 0/100 in their pre- and postconsumer content levels, there are 77 different permutations listed. Other significant grades include 0/100, 50/50, 30/30, 25/25, 85/15, 35/15, 90/10, 50/10 and 50/0 (pre- and post-).

Finally, during 1988-1993 when the federal government used a printing and writing paper guideline that had no postconsumer content requirement and was clearly

unworkable for steady-state production on large paper machines, manufacturers nonetheless began and/or completed construction on more than a dozen deinking operations oriented to printing and writing grades.

The fact is, private buyers and sellers of paper will always be able to negotiate recycled content levels that diverge from the federal guideline if it is in their interest to do so. *Setting a standard for the federal government's own purchasing that is reasonable but slightly leads the market does not compel any mill to make an uneconomic investment in recycling.*

B. Technological and Economic Trends in the Printing and Writing Paper Segment of the United States Paper Industry

More than 80% of the printing and writing purchased by the Federal Government is uncoated free sheet or white business papers. These papers dominate the printing and writing paper category with 52% of total printing and writing paper capacity in 1991.¹³ This market is undergoing structural change as mills install large, wide and fast paper machines to produce commodity grades at a low cost per ton. In 1975, 72.5% of printing and writing paper capacity (including uncoated groundwood and coated papers) was produced on machines of 75,000 tons per year (tpy) or less with only 7.5% of total industry capacity produced on machines over 125,000 tpy. By 1989 these percentages had changed dramatically -- 40% of total printing and writing capacity was produced on machines producing under 75,000 tpy and 38% over 125,000 tpy.¹⁴

However, despite the attention given "commodity machines" in the current debate, a large quantity of printing and writing paper is still produced on intermediate and small capacity machines. Table 1 compares the distribution of machine sizes in the printing and writing sector to the two other major users of kraft pulp, unbleached linerboard (used in making corrugated boxes and grocery bags) and solid bleached sulfate paperboard (e.g., milk carton stock).

The definition of a "commodity scale machine" has changed as machines have grown larger, but as Table 1 shows, 48% of all printing and writing paper is made on machines with a capacity of 100,000 tpy or less. A markedly higher proportion of true commodity scale machines are used to produce bleached and unbleached paperboard. Why the difference? Commodity machines work best when they are turning out the same product day in and day out. Linerboard has a much less complicated grade structure than the very broad category known as "printing and writing paper," within which there are many different kinds of products. In some printing and writing grades, smaller paper machines provide "a competitive advantage, because large-scale paper machines are less flexible in shifting production to meet less predictable and fast-turnaround special order flows and high-priced, limited-volume specialty paper production runs."¹⁵ What is happening in the printing and writing sector is that large machines are out-competing intermediate-scale machines in commodity grades, and intermediate machines are shifting to specialty grades, displacing small machines that make those products.

From 1971 to 1990, 156 printing and writing machines with an average capacity of

about 18,000 tpy each were shut down.¹⁶ Paper machines are controlled by computers; since the number of people required to run a paper machine (watch the computers) remains roughly the same regardless of the size, there has been a constant loss of jobs in this segment of the paper industry.

Table 1. Size of Machines by Principal Grade Produced
(capacity in thousands of short tons)

	Printing & Writing Papers		Unbleached Kraft Paperboard		Solid Bleached Sulfate Paperboard	
	Number of Machines	Share of Total Capacity	Number of Machines	Share of Total Capacity	Number of Machines	Share of Total Capacity
TOTAL	407	100%	69	100%	26	100%
0-5	35	--	--	--	--	--
6-10	30	1	--	--	--	--
11-15	18	1	--	--	--	--
16-20	16	1	--	--	--	--
21-30	54	5	--	--	--	--
31-40	42	6	--	--	--	--
41-50	30	5	--	--	1	1
51-75	62	15	--	--	3	4
76-100	42	14	2	1	2	3
101-125	20	9	3	2	--	--
126-150	19	10	2	1	--	--
151-200	22	16	8	7	10	33
201-250	11	9	8	9	5	22
251-300	5	5	9	12	1	5
301-400	1	1	24	40	2	13
over 400	--	--	13	29	2	19
TOTAL	25,052		22,029		4,922	
CAPACITY						

All data based on machines in place January 1991.

Source: American Paper Institute, Paper, Paperboard, Pulp Capacity: 1991-1995, 33rd Annual Survey, New York, 1992, pp. 8, 22.

While large machines can produce large quantities of paper at very low costs they "...sometimes have negative market consequences if too much capacity comes online, as in the 1990-91 period, which also coincided with the economic recession."¹⁷ Uncoated free sheet producers essentially created their own oversupply problem when four large uncoated free sheet machines with a total annual capacity of 1.1 million tpy, or 8.8% of total

existing capacity, came on line in 1990 and 1991. This capacity was probably planned around 1987 or 1988 when uncoated free sheet mill net prices jumped from \$658 to \$807 per ton. Operating rates hovered around 93% to 94% as uncoated free sheet prices rose to a high of \$860 per ton in 1989.

With the introduction of so much new capacity from September 1990 to September 1991, the market shifted from a seller's market as operating rates dropped to 88% and the average annual price for uncoated free sheet reached \$652 per ton, a drop of 24% from the 1989 high. Prices and operating rates are expected to remain low through 1993 with an average price of \$598 per ton.¹⁸ At these unusually low prices, most mills producing uncoated free sheet are operating at a loss. Increasing imports from Mexico and Brazil (the United States is a net importer of uncoated free sheet)¹⁹, only make the situation worse for small and medium sized mills. This scenario is a classic example of "the tragedy of the commons" where rational economic behavior of a few companies seriously damages the long-term well-being of the entire industry segment.

C. Economically Viable Strategies for Utilizing Deinked Fiber in Different Segments of the Printing and Writing Paper Industry

Given these changes already taking place, where does recycling fit in? In sum, increasing quality and consumer acceptance of recovered fiber content in paper has actually given mills more flexibility to expand capacity economically because mills can choose from a wider range of pulps.

The "delicate balance" between pulping and paper making operations at an integrated pulp and paper mill has been offered in the current dialogue as a justification for a lower standard, implying that a higher standard would force some mills to shut down their pulping capacity. In fact, the situation is more complicated than this, and bears closer inspection. Under certain conditions, economically viable opportunities to install deinking systems arise at mills in all configurations.

The cost and size of key pieces of equipment determine the capacity for a paper mill or any production facility for that matter. When a company builds a greenfield (brand new) integrated paper mill, the most expensive piece of equipment is the paper machine itself. State of the art paper machines cost upwards of \$250 million dollars. Thus, unless the mill plans to sell market pulp, the size of the pulp plant is determined by the size of the paper machine. The recovery boiler, the specialized furnace that recovers the pulping chemicals and burns the organic waste generated during pulping, is the most expensive part of a pulp mill. New recovery boilers cost from \$75 to \$100 million dollars today.

Over the fifteen to twenty year life of this equipment, however, the paper machine is much more amenable to incremental increases in capacity than the pulp mill. By installing better machine controls, size presses or drying sections, for example, mill engineers can increase the running speed of the paper machine, thus requiring more pulp. Although investments in increasing machine speed can be made in relatively large increments at individual mills, on an overall basis they increase annual capacity by about 1.5% per year.²⁰ This capacity increase amounts to 200,000 tons per year for the uncoated

free sheet that the Federal Government purchases. While pulp mill capacity can be increased by debottlenecking various pieces of equipment, eventually the capacity of the recovery boiler limits the amount the pulp mill can expand.

The remainder of this section shows how the decision to invest in deinking equipment or the purchase of deinked market pulp varies according to different mill scenarios.

1. Non-integrated or partially integrated paper mills

Non-integrated paper mills can incorporate deinked pulp fairly readily. Since they purchase virgin market pulp, they already have the storage and repulping facilities required to use deinked market pulp. Both non-integrated and partially integrated mills can install deinked pulp capacity to meet their raw material needs if they want to make the capital investment. Their operating costs are lower and more stable since they are not purchasing pulp on the market. The quality of deinked fiber is actually higher than dried fiber or fiber from mill trimmings because the volume of the cellulose fibers is restored during exposure to alkali during the deinking process. Market pulp and mill trimmings are repulped in water only so that the collapsed fibers are not restored.

One recent example of a non-integrated mill that is installing deinking capacity is International Paper Co.'s mill in Lock Haven, PA. Coming on line in November of 1993, this mill will produce 90,000 tons of 100% recycled photocopy paper per year, with a 50% minimum postconsumer content. Because the paper contains groundwood fiber from old newspapers and magazines and is less bright, it will reportedly be selling at a discount to virgin paper.

As mentioned above, the economic scale for an integrated deinked pulp line ranges from 200 to 300 tons per day. Many mills in this scenario are too small to use this amount of pulp in their paper making operations. In this case, the mill has to decide whether to run the deinking equipment most economically and sell its pulp on the market or produce pulp on a smaller scale and use it internally. Burrows Paper in Little Falls, NY is an example of a small mill that is installing deinking equipment for its own use and to make market pulp.

The opportunities for using deinked market pulp in this sector are substantial. During poor economic periods in the printing and writing paper industry, 18-19% of total production is non-integrated; in 1989 this number rose to 27%.²¹

2. Integrated commodity-scale mills

For a recovery boiler limited mill that wants to increase capacity by 100 to 300 tons per day, it is economically efficient to add deinked pulp capacity. The capital costs per daily ton of capacity for deinked pulp are about 40% less than for additional kraft pulp capacity.²² According to a major industry study published in 1990, "Comparison of production costs for a 280,000-metric-tpy virgin fiber mill and a 150,000-metric-tpy recycled mill show a mixed competitive picture. Mills using higher-grade wastes generally

have slightly higher costs than virgin fiber mills; however, if lower-quality waste can be used, secondary fiber can provide 'cost savings.'²³ The advent of deinking systems for removing polymer inks has since allowed mills to use sorted office waste paper as a furnish, which is substantially less expensive than other high-grade deinking papers. As the technologies and the process knowledge are developing to produce high quality deinked pulps from office wastepaper, operating costs are becoming more competitive with virgin kraft pulp.

The minimum economic scale of a pulp mill today ranges from 1250 to 1500 tons per day, so it is difficult to add small amounts of kraft capacity economically once the capacity of the recovery boiler has been reached. Optimal capacity for today's deinking equipment, however, ranges from 200 to 300 tons per day for pulp that is not dried (for mills with a single hydropulper and dispersion system), and 400 to 600 tons per day for air dried pulp that is sold on the market.²⁴

Union Camp's Franklin, VA mill is one example of a large commodity scale producer that is adding deinked pulp to supply existing paper machines that are increasing their running speed. Union Camp's mill is the largest printing and writing paper mill in the world, and one of the most profitable in the United States. Construction has begun on this facility, which will be operational in February 1995. The Weyerhaeuser Paper Company has also stated that it will use recovered postconsumer fiber to meet additional pulp capacity requirements for all of its future expansions in printing and writing paper.²⁵

3. Deinking expansions at intermediate scale integrated mills

As with larger mills, capacity increases at intermediate size mills can also be fed with deinked pulp. Cross Pointe Paper Co.'s mill in Park Falls, WI is an example of a mill that is now taking this step. In some cases, these mills are probably running at relatively low capacity, below 90%. Given demand for a recycled end-product, these mills may be able to buy deinked market pulp and run at higher capacities without altering their virgin pulp production.

4. Manufacturers of virgin bleached market pulp

A number of mills currently produce more pulp than they can use in their paper machines to take advantage of the lower production costs of modern large state-of-the art bleached kraft pulp mills. For example, International Paper's Selma, AL mill produces 492,000 tons of pulp annually. The mill produces paper with 240,000 tons of this pulp and sells the rest.

According to John Chrysikopoulos, Goldman Sach's forest products and paper industry analyst, the market for virgin kraft pulp will remain poor because of a number of structural changes. New participants from Brazil and Chile are presently dominating the pulp markets with their low cash manufacturing costs. Indonesia, another low cost producer, will enter the market pulp business soon as well. (For economic reasons related to savings on chemicals, energy and water use, the newest of these mills are moving toward totally chlorine free bleaching sequences.) Recent currency devaluations in the

Scandinavian countries have made their products more competitive with North American pulps. With few permanent mill closures expected to take place in the next few years, supplies of market pulp will continue to outpace demand.

Thus, mills that produce excess pulp are integrating downstream -- they are adding additional machine capacity so that they can sell paper rather than pulp. The newest paper machines can make 360,000 tons of paper per year. At Selma, in order to install this machine and significantly reduce their paper production costs, International Paper needed an additional 108,000 tons per year (300 tons per day) of pulp. The announcement that they will add a 400 tpd (input) deinking facility at the Selma facility suggests that International Paper may use deinked postconsumer pulp to meet their pulp requirements.²⁶

D. The Scope of Market Demand

In recent years, consumers have begun to look for ways to translate their concern about environmental issues into action in their daily lives. As a result, significant numbers of consumers now consider environmental factors in their product purchasing decisions, and demand products and packaging that are less burdensome to the environment. Numerous surveys and opinion polls confirm that consumers are actively seeking environmentally improved products.²⁷ Consumer product manufacturers have responded to this surge in environmental preferences with a blizzard of advertising claims touting the environmental attributes of their products and packaging. According to Marketing Intelligence Service, Ltd., as of 1990, products making environmental claims were being introduced as a rate 20 to 30 times greater than that of other new packaged goods.²⁸

Considering the impact of environmental consciousness on the market for recycled-content paper, we can very roughly (and conservatively) estimate the total volume of demand for recycled-content printing and writing paper by the beginning of 1996 to be at least 5 million tons per year, out of a total consumption of more than 25 million tons.²⁹ We also assume that the vast majority of these customers are unwilling to pay a premium over any substantial period of time, although they may be willing to pay a slight premium (2-4%) to enter the market.

Under these assumptions, from deinking facilities known to be completed by 1995, at a 10% overall average recycled content, 13.7 million tons of recycled-content paper can theoretically be provided, far saturating estimated market demand. Under these conditions, there would be less incentive for additional deinking projects to go forward, unless market demand for recycled paper is much greater than 5 million tons, or mills begin to compete for this market based on higher levels of postconsumer content (which would be undercut by a low federal standard). The impact of a higher standard is thus to accelerate the construction of deinking projects until market demand is saturated or the marginal cost of absorbing more recovered fiber becomes so high that recycling is priced out of the market.

IV. Jobs

Q. What dislocation, if any, could be expected in the pulp and paper production

industry if the executive order set the above listed pcm standards for federal purchases of recycled printing and writing paper? What level of job creation would this lead to in this and other industries? (Please complete for each of the above scenarios.)

As discussed above, the U.S. paper industry will continue to eliminate jobs as smaller mills are forced out of business by large integrated mills. *Recycling thus offers the only major net source of new jobs in the paper industry in the next decade.* Within the paper industry, growth in recycling will have three different types of impacts.

First, adding deinking facilities will help some large virgin paper mills grow even larger, because deinking will make more fiber available for expansion. Due to constraints on its existing supply of pulp, for example, the International Paper Company could probably not install such a large (360,000 tpy) machine at its Selma, Alabama mill without the addition of 108,000 tpy of deinked pulp capacity. Thus, in some cases, recycling will accelerate trends already underway. However, this effect is more than counter-balanced by two others beneficial effects.

Recycling will help some non-integrated and medium-sized integrated producers gain greater economic viability. Most of the small and medium sized mills operating in the U.S. are in the "Rust Belt" of the Northeast and Midwest. The proximity of these mills to abundant sources of inexpensive recovered fiber and to markets for their final products is transforming the economic viability of paper production by substantially reducing transportation costs. (Transportation of paper from the mill to its end-market can cost between \$50-\$100 per ton, for a product that sells for \$500-800 per ton at the mill level.) The International Paper Company's mill in Lock Haven, Pennsylvania is a good example of this type of facility, which probably would have been headed for economic obsolescence if not for the installation of deinking technology.

The positive impact of recycling on preserving smaller mills has already been demonstrated in the recycled boxboard industry, which uses cylinder machines, an older technology, to produce multi-layer paperboard for folding cartons. In order to sell their products in recycled packaging, companies such as Proctor & Gamble, Kodak, and Bristol-Myers Squibb have shifted some of their products into recycled clay-coated boxboard. Even in the midst of the recession, this has revived profits and growth in a sector of the paper industry that had otherwise been losing market share to virgin paper and plastic since the late 1960's. Increasing demand for recycled boxboard has also supported successful investments in more advanced recycling technology such as the James River Corp.'s multi-fourdrinier recycled paperboard machine, part of a \$90 million expansion completed in Kalamazoo, Michigan in 1992.

In addition, the operation of deinking facilities provides another source of job creation. A large deinked market pulp plant (400 tpd output of dried pulp) will employ approximately 100 workers, including 90 in salaried, high-skill manufacturing positions and 10 in hourly positions.³⁰ Approximately 250 workers are employed in constructing a deinking plant of this size. The direct job creation impact of making deinked market pulp is thus about one job per four daily tons of capacity.

The recycling process itself is also an economic development instrument. Solid waste management imposes an economic cost on society. Within this reality, economic development specialists recognize that the expansion of recycling is the potential source of a number of benefits. These include: (1) the creation of a significant number of jobs in the processing of materials, especially relative to other waste management alternatives such as landfilling; (2) the addition of substantial value to recovered materials and diversification and expansion of the manufacturing tax base through the growth of recycling-based advanced processing and manufacturing; (3) under efficient recycling collection programs, the avoidance of costs for waste collection and long-distance landfilling borne by local governments and businesses; and, (4) regional income retention through the substitution of locally generated recovered raw materials in place of imported virgin materials (such as paper pulp from Canada or plastic resin from the Texas Gulf).³¹

Successful recycling requires, in sequence: (a) separation and collection of materials that would otherwise become solid waste; (b) intermediate processing to sort, clean, and compact materials for transportation and marketing; (c) manufacturing, using recovered materials as inputs; and (d) consumption of finished products containing recycled content.

Increased paper recycling will initially create some job growth in the collection phase, but as truck design and routing are optimized, recycling collection systems will simply substitute for garbage collection. This is especially true for materials like office paper, which can be stored until large enough quantities are available for efficient pick-up and is usually collected by private waste management companies, which have an incentive to make their collection systems cost effective.

Processing recovered paper usually mean removing contaminants, sometimes separating different grades of paper, and baling the material for transport. A study of private paper processing facilities in Massachusetts calculated that 1 job is created for every 4 tons of paper processed daily.³² These tend to be entry-level blue collar jobs in sorting positions, forklift and front-end-loader operations, and equipment maintenance. Sorting mixed residential paper would create slightly more jobs than processing office paper, five jobs per daily ton of capacity.

These estimates do not measure the jobs produced indirectly through a multiplier effect, nor the additional jobs and increased income earned among firms that manufacture deinking equipment, pipe, pumps, valves, balers, conveyors, trucks and other equipment used in paper recycling. It is also important to remember that solid waste management is a non-discretionary part of private and municipal budgets, and savings in disposal costs go right to the bottom line. In times of recession, a large corporation can sell its fleet of jets or a city can cut back on some social welfare expenditures, but they cannot stop taking out the trash.

As noted in the previous section, the Executive Order will not compel mills to make uneconomic investments or shut down meaningful quantities of integrated pulping capacity in a way that would result in major jobs losses. Overall, on a net basis, recycling creates more jobs than other forms of solid waste management or commodity production.

Recycling a given quantity of material creates 2.5 times more jobs than landfilling, and 20 times more employment than combustion in a municipal solid waste incinerator.³³ In addition, many of the employment benefits of recycling accrue in urban areas, where there is a severe shortage of entry-level manufacturing jobs. According to one estimate, for every job created by producing paper from trees, five jobs are created in producing the equivalent amount of paper through recycling.³⁴

V. Costs to the Federal Government

- Q. Will the federal government face additional costs if the executive order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content based on the above listed pcm standards?

With the nation's local governments and businesses spending \$11 billion per year to dispose of paper waste, we feel that the first question that should be asked is: What are the additional economic and environmental costs to society of *not* recycling? When the full range of benefits of paper recycling is weighed, it becomes clear that shifting federal purchasing to recycled-content paper is a sound investment.

In the absence of federal leadership, states, local governments and private sector buyers have taken the initiative to stimulate recycled paper markets through affirmative procurement programs. All fifty states, over 400 local governments and more than 600 private companies have adopted "buy recycled" programs. The vast majority of these programs target paper products with postconsumer content. In addition, some federal agencies, such as the Joint Committee on Printing (JCP), have begun to purchase recycled printing and writing paper with at least 15% postconsumer content.

States and local governments have made substantial progress in cost-effectively purchasing recycled printing and writing paper. Notable experiences include:

New York State: Since 1981, New York State has purchased paper with various levels of recycled content. Between 1981 and 1991, the state spent \$65 million on recycled-content paper, accounting for 40% of the value of its purchases. In 1991, New York awarded 41 contracts for recycled-content paper, of which only 7 required a price premium, in addition to 22 printing contracts that used recycled-content paper. The overall premium paid across the 41 contracts was 0.58% (i.e., less than 1%). Results were similar for 1992.³⁵

Oregon: In the last two years, the state has spent a total of \$5.9 million on recycled printing and writing papers with either 50% total recycled content including 10% postconsumer, or 25% postconsumer content only. The state offers a 12% price preference, however, most bids have been awarded at a premium of between 5 and 9%, with some being cost competitive.³⁶

Maryland: Maryland spent \$5.3 million on recycled printing and writing paper in fiscal year 1993. The state requires 50% total recycled content including 10% postconsumer content and reports that recycled paper bids are cost competitive with

virgin paper.³⁷

The Council of Great Lakes Governors: In 1992, seven states (IN, MI, MN, OH, PA, SD, WI) purchased an estimated 28 million pounds of recycled copy paper with 50% total recycled content, including either 10 or 20% postconsumer content. Roughly one-quarter of the purchase included 20% postconsumer content. The states paid a price premium of about 7%, overall.³⁸

The Western States Contracting Alliance: The Alliance, which includes 17 western states and several tribal councils, is preparing a cooperative bid for 66 million pounds of photocopy paper with 50% total recycled content including either 10 or 30% postconsumer content. Officials expect no problems filling the bid at these recycled content levels.³⁹

New York City: New York City has contracted for more than \$15 million on recycled printing and writing paper purchases and printing contracts with at least 50% total recycled content, including 10% postconsumer, over the past three years. Several printing and writing paper products contained higher levels of postconsumer content, such as 100% postconsumer content computer paper. The city offers a price preference to recycled paper bidders, but has only used it on rare occasions. The total price premium the city paid for recycled printing and writing paper during this period is less than one percent.⁴⁰

San Jose, CA: In fiscal year 1992, the city spent nearly \$75,000 on recycled printing and writing paper with at least 50% total recycled content including 10% postconsumer. The city offers no price preference and bids exclusively recycled paper.⁴¹

Some federal agencies have also begun to purchase recycled printing and writing papers with 10 to 15% postconsumer content. Earlier this month, the JCP opened a bid for 5 million pounds of recycled printing and writing paper, the majority of which was recycled offset with 50% wastepaper, including 15% postconsumer content. All but one company bidding on the offset contracts offered 15% postconsumer content. JCP has been buying exclusively recycled offset (including 50% wastepaper content) for several years and experienced only a 2 to 3% price premium with the addition of the 15% postconsumer content.⁴²

Over the past two years, JCP has increased the levels of postconsumer content in its printing and writing paper specifications from 0 to 10 to 15%. The same paper manufacturers, and often the same mills, bid on virgin paper, 50% wastepaper, 50% wastepaper including 10% postconsumer (50/10), and 50% wastepaper including 15% postconsumer (50/15). For example, in 1993 Eastern Fine Paper Company, of Brewer, Maine, bid on JCP contracts for 50% wastepaper content offset paper (4/93), 50/10 (4/93, 7/93, 10/93), and 50/15 (7/93, 10/93). Similarly, Georgia Pacific bid on both the virgin and 50/10 copy paper contracts earlier this month. In short, for the government market, manufacturers will produce what government contracts specify.⁴³

In the private sector, 72 companies, including Bank of America, Chevron, Pacific Gas & Electric and others in the San Francisco Bay Area formed the Recycled Paper Coalition in 1991. Members of the Recycled Paper Coalition commit to purchasing recycled paper with at least 10% postconsumer content. Many member companies are exceeding that requirement already, and the coalition will likely increase its standard soon. Some specific purchasing experiences include:

Bank of America: In 1992, Bank of America's California offices purchased 15 million pounds of copy paper with at least 10% postconsumer content at a comparable price to virgin paper. In 1993, the bank purchased roughly the same quantity of paper with 25% postconsumer content. This year they will pay a 3% premium over virgin paper bids.⁴⁴

Bell Atlantic Company: This company recently signed a three year, \$3 million contract for computer paper with 50% recycled content including 20% postconsumer. Bell Atlantic pays no price premium for recycled products.⁴⁵

Coca-Cola Company: Coke uses recycled stationery that includes 60% total recycled content including 15% postconsumer; post-it notes, file folders, and computer paper with 50% total recycled, including 10% postconsumer; and the Coca-Cola 1992 annual report was printed on 100% postconsumer content paper. Overall, the company has saved from 3 to 12% in purchases of recycled products.⁴⁶

Large manufacturers of virgin paper that are entering the recycled paper business state that although they would like to receive a premium upon entering the market, they are not counting on this phenomenon to last. Factors that would tend to reduce costs include greater competition, the elimination of the 50% total recycled content requirement, and more cost-effective equipment for deinking and drying market pulp.

Conclusion

A valuable lesson can be learned from the recent experience of state governments in negotiating voluntary recycled content standards with newspaper publishers. In 1989, there were nine newsprint mills in North America that used old newspapers as a raw material (out of a total of roughly 65). Between 1989 and 1992, newsprint producers added a total of 12 new machines, only one of which was integrated to a newsprint deinking mill. This exceptional round of construction created a massive glut of finished newsprint, severely depressing prices.

In November of 1989, the price for recovered newspapers also crashed, as a result of rapidly increased collections stemming from an very sharp increase in landfilling costs in the Northeast. Prodded by their readers, newspaper publishers asked suppliers for recycled newsprint (at no price premium), and were met with familiar stories of inferior quality and the poor performance of recycled newsprint on high-speed printing presses. Legislatures in Connecticut and California soon passed laws "requiring" publishers to raise the levels of recycled content in newsprint (these laws were very mild, lacking enforcement

provisions and providing for exemptions in cases of increased costs).

Facing legislation in other states, groups of newspaper publishers then negotiated voluntary agreements to increase the level of recycled content with officials in states like Massachusetts and New York.⁴⁷ Rather than taking a lowest common denominator approach, these agreements called for 40-50% recycled content levels by the end of the decade. As with the potential response of printing and writing paper manufacturers to the Executive Order, the agreements did not anticipate that all producers would make recycled newsprint at the 40-50% level, but that this would be an average across different large publishers in the same state.

Despite the self-induced poor financial condition of the newsprint industry, with the widespread adoption of new flotation deinking technology, the newsprint mills found that they could make a high-quality sheet using old newspapers and magazines, and in many cases under generate favorable economic returns. Now over a dozen newsprint deinking plants are in operation or under construction, and the newsprint industry is well on its way to resolving the "glut" of old newspapers.⁴⁸ While newsprint and printing and writing paper are clearly distinct and different products, federal officials should take note of the ambitious and reasonable targets set by their state counterparts, and their ultimate effectiveness.

ENDNOTES

1. "On Sunday, September 12, at the National Paper Trade Association's Annual Convention, the Fine paper Division unveiled two new products ... [including] the GREAT WHITE brand of recycled fiber content papers ... Virtually every paper merchant in the country -- and many foreign countries -- were present. ...The "GREAT WHITE" brand of papers will contain 25 percent post consumer waste. A great white shark theme is incorporated into the package graphics and promotional materials." C.H. Greiner, Jr., Vice President and General manager, Fine Paper Division, Union Camp Corp. "First Word" [Union Camp Internal Communication], September 13, 1993.
2. Debra Garcia, of Paper Recycler [an industry newsletter], Phone interview, September 21, 1993.
3. James Rossi of Stone & Webster Engineering, Boston, MA, which intends to build a 200 tpd output plant in Auburn ME. Phone interview, September 23, 1993.
4. In 1980 there were 203,000 workers in pulp and paper mills and 65,000 workers in paperboard mills. Statistical Abstract of the United States, 1989, Table 657. In 1989 there were 194,300 workers in pulp and paper mills and 52,900 workers in paperboard mills. 1992 Pulp & Paper Factbook, San Francisco: Miller-Freeman Publications, 1991, p. 56 from U.S. Bureau of Labor Statistics).
5. Franklin Associates Ltd. 1991. Evaluation of Proposed New Recycled Paper Standards and Definitions, October 8, 1991, Figure 1, p. 8.
6. Neil Clarke, Ponderosa Fibres of America, Inc. Phone Interview, September 24, 1993.
7. "The Conservatree Information Services/ National Association of State Purchasing Officials Recycled Paper Survey," Conservatree Information Services, September/October 1992. The states are: Alabama, Arizona, California, Colorado, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Wisconsin, and Wyoming. Memorandum from Richard Keller, Northeast Maryland Waste Disposal Authority, August 27, 1992.
8. Telephone interview with Susan Kinsella, Director, Californians Against Waste Foundation's Buy Recycled Campaign, September 21, 1993.
9. Memorandum from Richard Keller, Northeast Maryland Waste Disposal Authority, September 21, 1993.
10. According to research done by Franklin Associates for the RAC, under the "processed recovered fiber" proposal, by 1995, about 47% of converting scrap would include contaminants that allow it to be counted under the category of "processed recycled fiber." Because converting scrap is a small proportion of total paper production, this means that in 1995, 94.9% of total paper production could fall inside the "processed recycled fiber" definition. Franklin Associates Ltd. Evaluation of Proposed New Recycled Paper Standards and Definitions, Table A-4, Appendix, p. 6.

11. See AFPA bar chart and calculations in EDF analysis submitted to OEP, OMB, and NEC on September 15, 1993.

12. (1) Virtually all recycled paper manufacturers already certify or label the post-consumer content of their products.

(2) The paper industry is an international leader in developing sophisticated process control systems, statistical sampling and monitoring routines, and inventory management systems. It is hard to believe that such expertise cannot be applied to tracking the grades and sources of recovered paper.

(3) The origin of most recovered paper -- perhaps 90-95% based on industry testimony -- can be told by visual inspection or its given grade under industry paperstock standards. For a mill to certify a certain minimum post-consumer recycled content, it does not have to know the source of every ounce of paper used in the mill, but must use enough post-consumer recovered paper to stay above a threshold, incorporating reasonable tolerances for variation in fiber supply. To our knowledge, a detailed cost-per-ton figure for the additional monitoring costs at a printing and writing paper mill required to meet a post-consumer certification requirement (above that already required for inventory and quality control) has yet to be provided.

(4) Cheating by brokers and mills can occur under any system (as is now reportedly happening under a 50% wastepaper requirement). Under any definitional system, there will always be a slightly fuzzy boundary between what meets the definitions and what doesn't (for example, between a bale of fiber containing some paper with ink coverage or "contaminants" and some paper without). To prevent cheating under any system, paper purchasers must set high standards for monitoring and certification and incorporate them into suppliers' quality review procedures. Additional enforcement actions by government consumer-protection agencies may also be effective in deterring egregious violations.

13. Paper, Paperboard, Pulp Capacity and Fiber Consumption 1991 - 1995 33rd Annual Survey, New York: American Paper Institute, 1992, p. 8.

14. 1992 North American Pulp and Paper Factbook, San Francisco: Miller Freeman Inc., 1991, p. 186.

15. J. Chrysikopoulos and T. Doster, Forest Products-Paper Company Handbook, Goldman Sachs Investment Research, January 6, 1993, p. 17.

16. Paper, Paperboard, Pulp Capacity and Fiber Consumption 1991 - 1995 33rd Annual Survey, New York: American Paper Institute, 1992, pp. 8 - 9.

17. 1992 North American Pulp and Paper Factbook, San Francisco: Miller Freeman Inc., 1991, p. 186.

18. J. Chrysikopoulos, Uncoated Free Sheet Paper Markets, Goldman Sachs Investment Research, June 16, 1993, p. 2.

19. M. X. Diverio, P. W. Soldati, Outlook for Uncoated White Papers, UBS Securities Equity Research August 9, 1993, p. 20.

20. J. Chrysikopoulos, "Uncoated Free Sheet Paper Markets", Goldman Sachs Investment Research, June 16, 1993.
21. 1992 Pulp & Paper Factbook, San Francisco: Miller Freeman Publications., 1991, p. 303.
22. Recent costs per daily ton of capacity for new deinked pulp mills that use office waste paper range from \$275,000 to \$333,000 for Great Lakes Pulp & Fibre Inc.'s deinked market pulp mill in Menominee, MI (*Pulp and Paper Week*, Nov. 2, 1992) and Union Camp's facility in Franklin, VA (*Paper Recycler*, March 1993). Typical costs per daily ton of capacity for new bleached kraft mills range from \$550,000 based on acquisitions after 1988 to \$750,000 for Aracruz Cellulose's new state of the art mill in Brazil (T. Clephane, "Forest Products & Paper", Morgan Stanley U. S. Investment Research, Dec. 31, 1992 and J. Chrysikopoulos, "The Market Pulp Business from an Investor's Point of View," Goldman Sachs Investment Research, Aug. 24, 1993).
23. A. C. Ververka, "Economics Favor Increased Use of Recycled Fiber in Most Furnishes", *Pulp and Paper*, September 1990, pp. 100 - 101.
24. Allen Miller, American Power Co., telephone interview, Sept. 20, 1993; and Pulp and Paper Week, November 2, 1992, p. 6.
25. "Recycling -- And Beyond", Weyerhaeuser Paper Company Publication, p. 10.
26. "IP builds 360,000-tpy uncoated free-sheet machine at Selma, Ala., after labor agreement", *Pulp and Paper Week*, Aug. 9, 1993, p. 1.
27. A 1990 national NBC/Wall Street Journal poll found that 38% of surveyed consumers said they had regularly changed the types of products they buy and use because of environmental concerns. An additional 38% said they did so occasionally. See Hart, P. and Teeter, R., April National Poll, conducted for NBC News and the Wall Street Journal between April 11-16, released April 20, 1990. A 1990 Penn and Schoen national survey found that 74% of Americans said they are more likely to purchase a product in biodegradable or recyclable packaging. See Williams, Simon, "The Green Revolution in Products and Packaging," reprinted from VM + DT Magazine, January 1990, citing a telephone survey conducted by the polling firm of Penn and Schoen, Inc. Furthermore, many consumers are even prepared to pay a premium for a product that they perceive as being better for the environment. An Abt Associates study of American consumers conducted in November of 1990 found that 90% of those interviewed said they would pay more for environmentally sound products. See Abt Associates Inc., "Consumer Purchasing Behavior and the Environment" (Cambridge, MA, November 1990).
28. The Marketer, April 1990 pp. 36-7; Boston Globe, March 2, 1990 pp. 55, 59.
29. This is based on the assumption that at least 1,170,000 tons of deinking capacity will be installed and operating by the end of 1995 -- these are projects that are in place now, under construction, or nearly certain to go forward. Assuming that deinked market pulp producers have contracts for their fiber and that integrated manufacturers know that they will be able to sell all of their product (both assumptions are required to obtain financing for mill investments), at 25% average recycled content (a high number, set by fiber weight) this leads

to 5.5 million tons of production, which will presumably go to customers who know that the paper has recycled content and have asked for it.

30. Based on projections for PenCor, Hagerstown, MA; roughly consistent with plants of different sizes.

31. Andrew Reamer, "The Economic Development Benefits of Recycling," Economic Development Commentary, Winter, 1991, pp. 20-29.

32. R. Ingenthron and W. Kuh, Massachusetts Dept. of Environmental Protection, "Value Added by Recycling Industries in Massachusetts," July 27, 1992.

33. John Ruston and Shelley Dresser. 1988, "Policy Options for Developing Secondary Materials Markets," Journal of Resource Management and Technology, July 1988, p. 61.

34. Robert Letcher and Mary Sheil. 1986. "Source Separation and Citizen Recycling," in Wm. Robinson, ed., The Solid Waste Handbook: A Practical Guide. New York: John Wiley and Sons, p. 221.

35. State of New York, Executive Department -- Office of General Services. Internal memoranda, Dec. 30, 1991 and 1992.

36. Telephone interview with Terry Larrance, State of Oregon Purchasing, 9/22/93.

37. Telephone interview with Richard Keller, NE MD Waste Disposal Authority, 9/21/93.

38. Telephone interview with Dan Wehrman, Wisconsin State Bureau of Procurement, 9/21/93, and Memorandum to Interested Parties, 9/21/93.

39. Telephone interview with Connie Stacy, Washington State Department of General Administration, 7/28/93.

40. Purchase of Products With Recycled Content, Fiscal Year 1992. NYC Department of General Services, November 1992.

41. Recycled Products Procurement Annual Report, City of San Jose, October 1991.

42. Telephone interview with Sara Jones, Joint Committee on Printing, 9/20/93.

43. "Paper Mills Supplying Bidders on Government Recycled Copier Paper Contracts," and "Paper Mills Supplying Bidders on Government Recycled Offset Printing Paper Contracts," Government Printing Office.

44. Telephone interview with Candice Scarlatos, Bank of America, 9/20/93.

45. Telephone interview with Maureen Burke, Bell Atlantic Company, 9/22/93.

46. "Buy Recycled Business Alliance: Profiles In Buying Recycled," National Recycling Coalition's Buy Recycled Business Alliance.
47. Indeed, eleven states have passed mandatory minimum postconsumer content standards for newsprint and eleven states have voluntary agreements to that effect.
48. Michael Alexander, "Newsprint Partnership Key to Recycling," Pulp & Paper, September, 1993, p. 182.

DRAFT AFPA RESPONSES
EO ON FEDERAL ACQUISITION , RECYCLING AND WASTE PREVENTION
Questions Regarding Recycled Paper
(AFPA Answers Match Questions Categories)

Definition Question

What definition of recycled content should the Federal government use in order to ensure the maximum utilization of postconsumer material (pcm). How does this relate to current practices at the federal, state, and local level, and in private paper purchasing initiatives?

Definition Answer

To address the issue of "maximum utilization" of postconsumer material successfully one must look at the entire universe of recycled content products and the recovered paper from which the products are manufactured. Considering only printing-writing papers and postconsumer is limiting to overall increases in the utilization of postconsumer materials and in paper diversions from landfills.

Over 90% of all future gains in paper recycling will come from the post-consumer waste stream, as has been the case since 1988. Why? Because virtually all pre-consumer paper is, and will continue to be, used. Therefore, selecting the best path is to increase total paper recycling will result in the most efficient, least costly and least confusing way to increase the recycling of post consumer materials.

For recycled content printing-writing paper, use of the term "postconsumer and/or processed recovered fiber" will unquestionably maximize overall recycling, at least 90% of which will be in the postconsumer grades.

There are at least 70 categories, under the Institute of Scrap Recycling Industries grading system, of recoverable paper, all of which can be diverted from the solid waste stream. Envision them stacked high, yet to be recovered, with the highest-valued fibers at the top and descending to the lowest valued at the bottom. Recycled content printing-writing papers, because of the narrow tolerances involved in their manufacture and high performance specifications such as strength and brightness, must generally use papers from the top of the stack, typically clean, uniform and of the highest fiber quality.

Given their overall market size (30% of the total U.S. paper and paperboard production), the increased recovery and use of these papers by printing-writing manufacturers requires other paper recyclers to recover and use alternative papers elsewhere in the stack. These other producers will not leave recycling. Generally, they have more flexibility because the specifications for their products can also be addressed over a more diverse range of recovered papers. For example, these producers may not have to deink their recovered papers. Conversely, printing-writing

producers do not have the technology nor luxury to use papers from just anywhere in the recovered paper stack.

Technology upgrades the prospects that a fiber can be used in broader applications, making it more attractive. This upgrading is typically a function of improved contaminant removal. Paper fibers are cellulosic and break down through manufacture, use and handling. Technology cannot reverse the fiber breakdown process, nor can it take a lower quality groundwood fiber and give it the properties of a higher-valued bleached kraft fiber. Said another way, printing-writing manufacturers cannot use the full stack of recovered fibers. They are restricted to a relatively small segment and must compete with one another, and with other paper recyclers who use them, for the highest-valued recovered paper fiber.

Accordingly, to maximize the use of all recovered paper, you must get the optimal match-up of highest-valued product producers using the highest-valued recovered paper. Economics and technology is what moves paper producers to select between grades of recovered paper.

Given the industry's current economic condition, few totally new "greenfield" mills will be built over the next five years. Therefore, increased capacity to use recovered paper will have to come at existing mills, either by installing on-site deinking or purchasing recovered paper market pulp. In either case, significant investments are required. To make an economical investment, the papermaker must have a reliable fiber supply to feed his or her mill to get the peak efficiencies that are demanded by such heavy fixed cost investment. The pulp and paper industry is the most capital intensive manufacturer in the U.S., with a historical operating rate of 92%. Uninterrupted operations are a profit imperative.

Given conditions which cannot be ignored, the U.S. manufacturers of printing-writing papers developed their Recycled Content Initiative as the surest way to maximize overall recovery and recycling of printing-writing papers. A key aspect of their initiative is use of the term "postconsumer and/or processed recovered fiber." The term applies to all recovered paper which must be processed/treated identically to postconsumer before it can be reused in another printing-writing paper.

Since deinking equipment and processing is so expensive, papermakers will not dedicate any of their deinking capacity to grades for which they receive no marketplace recognition. Magazine returns and press overruns are as costly to prepare for reuse as postconsumer, but the marketplace "credit" for their use is not commensurate with the papermakers' cost to utilize them. EPA recognized this problem in their October 3, 1990 Federal Register notice on the guideline review for printing-writing papers, acknowledging this value issue by suggesting possible consideration of a "deinked" category.

Only the U.S. and Canada define "postconsumer" so narrowly as to preclude any credit or recognition for deinked preconsumer fibers in commodity printing-writing grades. In other countries, paper becomes "used" or "postconsumer", once it has been through the converting process for end users.

Use of the term "postconsumer" requires establishment of a collection and fiber processing infrastructure to track and audit sources of recovered papers, which is costly to U.S. and Canadian producers. These collective costs make U.S. manufactured printing-writing papers with postconsumer content vulnerable to imports who can make the same claim, using a broader base of recovered paper which typically cannot even be substantiated. There is no test which customs officials can use to certify recycled fiber content, let alone "postconsumer" content by U.S. definitional standards. This puts U.S. producers at a disadvantage when competing head-to-head with foreign producers in the recycled-content market for printing-writing papers.

Enabling U.S. producers to obtain marketplace recognition for "postconsumer and/or processed recovered fiber" helps to level this playing field. It will minimize the impact of import substitution, which can be one of the unintended effects of too rigid a definition for U.S. producers and too unrealistically high a recycled content level. Unaddressed, import substitution is a threat which jeopardizes U.S. jobs and does not divert U.S. paper from landfills.

Adoption of the "processed recovered fiber" concept is also important because of very real concerns over supply, once the larger commodity machines begin making recycled content printing-writing paper. Acceptance of this term with "postconsumer" broadens the available pool of recovered paper and improves the potential applications for the producers, thereby reducing future supply risk concerns. Most consultants who have studied the matter carefully, including Franklin Associates and Andover Associates, have identified the recovered paper supply for printing-writing as a major concern in the not too distant future.

Capacity Question

What capacity constraints, if any, might arise assuming the executive order mandated all agencies to procure recycled printing and writing paper containing the following levels of pcm?

Scenario A: -a 10% pcm standard immediately
 -a 15% pcm standard by January 1996
 -a 25% pcm standard by January 1999

Scenario B: -a 15% pcm standard by January 1995
 -a 25% pcm standard by January 1999

Scenario C: -a 20% pcm standard by January 1995
-a 30% pcm standard by January 1999

Capacity Answer

Fundamental to addressing capacity constraints is the recognition that levels set for federal government purchases will be defining for private and public recycled-content printing-writing paper market sectors as well. This has been the historical case, since the current 1988 EPA guideline was adopted, a fact which has been publicly confirmed by EPA analysis. The federal government market is not separate from other markets for the same paper, and capacity to serve it cannot be analyzed separately from capacity to supply similar products to other market sectors.

All of the scenarios prescribe a rigid schedule for recycled content increases. Setting levels arbitrarily will not ensure initial participation if it is too high, nor will it provide for incremental participation, if the subsequent interval time frames are shorter than the time required to permit, design and construct the facility -- at least a three year period, sometimes as high as five, for a new machine or mill.

Adopting an inflexible approach would miss the opportunities offered by technology breakthrough, investment cycles and other time-sensitive factors to maximize the use of recycled paper products by the federal government and in other market sectors. For example, in Scenario A, producers committed to changes to comply with the immediate 10% postconsumer standard would have insufficient time to also meet a 15% standard by January 1996, were significant additional capital investments required beyond that which they invested to reach the 10% threshold. Any minimum interval should be no less than 3 years in duration to match the minimum industry investment cycle.

EPA already has the authority under existing law to set content standards of federal procurement of printing-writing and other paper products. Specific time and percentage standards need not be "fixed." Following the current approach, rather than a fixed schedule of rates and dates, would allow the federal government to adjust both timing and new levels to take best advantage of marketplace developments beyond the current investment cycle.

Setting too high a content level initially will act to restrict U.S. producer capacity only. Because foreign competitors enjoy less restrictive definitions of postconsumer material, they will be better positioned to supply the federal government and other market sectors than U.S. producers. The consequences will be increased imports, some potential loss of American jobs and more imported paper ending up in U.S. landfills. Initial standards need to be achievable, so that capacity conversions are realistic for the big commodity machines. With little new capacity forecast because of

the current economic condition of the industry, conversions are the only realistic path to near-term increases in recycled content.

Scenario A, modified to incorporate the concepts of the Printing Writing Recycled Content Initiative, is the only scenario which has the potential for meaningful near-term impact, because it starts at levels which can be achieved broadly within the industry through incremental changes to existing capacity. It is estimated that at least 25-30% capacity participation can be realized in the near term among the printing-writing industry's commodity machines. Cost runups, of up to 50% and higher, owing to severe process imbalances at fully integrated commodity mills required to run at content levels above 10%, will significantly restrict participation at the 15% and 25% levels. For example, at a 15% level, participation is estimated to reach only 6-12% of commodity grade capacity, and at 20%, less than 5% of the printing-writing commodity machine capacity would be expected to participate in 1995.

It is particularly difficult to evaluate accurately the impact of the 25-30% levels specified in the scenarios for 1999. By then, the industry will have had five solid years of experience with commodity mill production of recycled-content printing-writing papers. Competition, technology advance and market development will all have so influenced content levels by that time, as to make fairly irrelevant any levels set today.

Beside actually slowing the progress of printing-writing producers to use more recovered paper, adopting scenarios B & C will strain government credibility, since most within the industry and its customer base understand the severe and significant negative impacts on the broader industry of pushing recycled content to an uneconomically sustainable or realistic level. It will be embarrassingly clear that a broadly unachievable goal was set to the detriment of recycling generally.

The manufacturers in the industry -- those who actually put the capital at risk -- know there must be a forecasted return before an investment is undertaken. In a business of long-lived assets, with very unattractive capital recovery conditions brought about by the interplay of the alternate minimum tax and the business cycle, a miscalculation of this nature can jeopardize not only the incremental investment but the broader enterprise. Printing-writing producers will reach for a market, but they won't jump off a cliff for one.

Jobs Question

What dislocation, if any, could be expected in the pulp and paper production industry if the executive order set the above listed pcm standards for federal purchases of recycled printing and writing paper? What level of job creation would this lead to in this and other industries? (Please complete for each of the above scenarios.)

Jobs Answer

The paper industry employs some 1.4 million people and ranks among the top ten manufacturing employers in 46 states, with an annual payroll of approximately \$46 billion. Over \$100,000 in capital equipment supports every worker in the industry, enabling our workers to increase their productivity by 3% per year since 1980. U.S. producers are cost competitive worldwide, and represent 30% of world capacity. The U.S. per-capita recycling rate is better than the EC, and it is growing faster than that of the EC. The amount of paper recovered by the U.S. paper industry is larger than the entire paper production of the world's number two papermaker, Japan. In short, the industry knows something about papermaking.

The industry has taken the lead in establishing a national goal for recovering 40% of all paper in the U.S. by 1995, a goal it will meet two years ahead of schedule. Setting a reachable goal gave the industry a clear direction which was beneficial in helping reduce paper in the solid waste stream and meeting customer demands for recycled content products. Attainable goals for action produce beneficial results as is shown by the industry's commitment and achievement of the 40% goal. Unattainable goals cause credibility problems for all involved.

The paper industry opposes the setting of unrealistic and unattainable goals such as those set forth in the earlier draft of the Executive Order on Recycled Goods. Not only will recycled content percentages set too high act as a barrier to maximizing recycling in the printing-writing paper sector, but they could result in an immediate dislocation of jobs within the industry and allied industries. Instead of stimulating investments by the U.S. industry resulting in creation of new jobs, U.S. companies would be discouraged from participating in the growing market for recycled content products, shifting market share for these products, some of which will be provided by offshore producers. This would be an unfortunate but not unpredictable result, since U.S. domestic markets are the world's most attractive and remain open to foreign paper products. The U.S. is forced to compete against tariffs in most of its export markets.

Another problem is the definitional differences between the U.S. and other countries with regard to the term "postconsumer." Other than the U.S. and Canada, no other country makes a distinction between preconsumer and postconsumer fiber. For example, France and other European countries count all recovered paper generated after the papermaking process as postconsumer. Since the presence of recycled fibers in papers cannot be verified through testing, claims of postconsumer content by foreign producers provide an opportunity for competitive mischief, as well as create a competitive disadvantage for U.S. producers, related to the postconsumer definition. Imported postconsumer content papers, being able to use a more liberal definition than products of a U.S. producer, would more easily meet U.S. guidelines. The result: the U.S. government will have erected a non-tariff barrier against its own industry.

With significant overcapacity in Europe in need of a market outlet, foreign producers are ready to fill the orders. Measurable job loss would occur not only in the pulp and paper industry, but in the many additional supply and service areas connected to the industry. Paper is a worldwide commodity market where the difference in just a few dollars per ton can be the difference between a fully operational mill and one that must take downtime to balance supply with demand -- an unattractive option for an industry whose historical capacity utilization is 92%.

Under the 10% level which appears in Scenario 1, jobs within the paper and allied industries would increase. Many of the fields that should expect increased employment would be: municipal and private refuse sorting and collecting facilities, collection services, wastepaper dealers, equipment manufacturers, engineers, construction workers, computer and software manufacturers, engineers, construction workers, computer and software manufacturers, transportation and other associated personnel. As the content percentage levels increase, unless they are moved upwards in sync with what is economically achievable, the opportunity for job creation as listed above would be significantly minimized. Under the most severe levels, markets will be lost, and U.S. jobs decreased.

Costs to the Federal Government Question

Will the federal government face additional costs if the Executive Order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content based on the above listed pcm standards? (Please complete for each of the above scenarios.)

Costs to the Federal Government Answer

Whether or not the federal government will face increased costs depends upon the prices of its paper purchases, something that the industry cannot predict. What is certain, however, is that the overall costs to manufacture paper will increase if, indeed, the recycled content production of these grades of paper is undertaken on commodity machines.

Generally, a company has few options to recover costs. Productivity gains can offset cost increases, but this possibility has limited potential if no concurrent machine modernization is undertaken. For some larger companies, rebalancing grade mix onto other machines and at other mills offers a marginal improvement opportunity. Technology changes hold the future promise of offsetting cost increases, but not in the near term. Otherwise, price is the only avenue to recover additional costs.

In evaluating these costs, one must keep in mind that costs have to be calculated in the context of the existing equipment and machinery the Industry has in place. For

example, for a non-integrated mill (usually without a commodity machine) recovered market pulp can be less, or only slightly more, costly than virgin pulp, so pulp substitution is not a major problem. In fact, since pulp is one of the mill's biggest costs, non-integrated pulp buyers are among the savviest at keeping purchase costs low.

For an integrated mill (most commodity machines are in integrated mills), the cost of substituting recovered paper market pulp will always be much, much more costly for two reasons. First, because the virgin pulp displaced is much less expensive than its market pulp replacement and, second, the non-manufacture of that displaced virgin pulp creates imbalances and inefficiencies in the entire remainder of the mill, thereby increasing the costs that must be allocated to the products produced.

For example, one company has thoroughly analyzed the cost impact of adding deinked fiber into a fully integrated commodity printing-writing mill. While results will vary from mill to mill, these are illustrative and not atypical. Adding 10% deinked fiber results in a cost penalty of 10%. Increasing the amount added to 15% increases the cost penalty to 50%. This dramatic differential for a seemingly small increase of 5% demonstrates the exceptionally narrow margin of flexibility to adjust the tightly linked pulp, energy and chemical recovery systems in an integrated mill. Five percent sounds like a small amount but, in context, it is 50% more than the 10% level in a manufacturing environment.

The options discussed earlier make it possible for a producer to moderate or overcome a 10% penalty and participate without significant cost penalty. However, it is virtually impossible to overcome a 50% cost increase without commensurate price increases. At the 20%, 25% and 30% levels even higher cost penalties would be incurred, virtually guaranteeing that very few mills would add such pulp-displacing capacity to existing facilities.

What confidence can the administration have that the printing-writing producers will, in fact, make the investments and adjust their approaches to more aggressively incorporate recycled fibers into the mill output?

The industry has gone to great lengths to demonstrate its recycling leadership because of its commitment to recycling. In 1990, the industry voluntarily committed to a national goal of recovering by 1995 40% of all the paper used in the U.S.

The industry has regularly and publicly reported progress toward meeting that goal and is now likely to meet it by year end. The industry's proof of performance in this area directly relates to the subject of the administration's Executive Order and offers a high degree of assurance that commitments made to increase the production of recycled-content printing writing papers will also be met. This industry has an

unparalleled record of recent accomplishment in the area of recovery and recycling and that should be some benchmark as to how the industry will perform in the future.

The length of time required to accomplish capacity expansions is such that projects underway are well known publicly at least 1-2 years before startup. Through the industry's Annual Capacity Survey and from other data sources, adequate public data is available regarding capacity trends to assess progress towards goals. Attached are two September 1993 AFPA reports which speak to this issue -- *Recovered Paper Deinking Facilities and Publicly Announced Expansion Plans for Increased Use of Recovered Paper*.

In just five months since March, the number of recycling capacity expansion projects recently started, under construction or in planning has increased from 120 to 145, and the number of deinking facilities has grown from 51 to 60. In addition to plans for incremental use of recovered paper on existing commodity machines, two companies have announced major expansions of recycled-content printing writing capacity for 1995.

Finally, the rate of growth of recovered paper market pulp demand in 1994 and 1995 provides direct evidence that the amount of deinked fiber demanded by printing-writing producers is on the increase. The preliminary results of this year's AFPA Annual Capacity Survey indicate that the projected 1994 and 1995 demand for recovered paper market pulp has more than doubled from the amounts projected by producers for those years in last year's survey.

Incentives Question

Will the above listed pcm standards for recycled printing and writing paper create the right incentives to ensure that mills of differing sizes begin to use pcm in the production of paper? Is there a better alternative" (Please complete for each of the above scenarios.)

Incentives Answer

The best incentive for both the industry and the public would be an Executive Order which incorporates the principles embodied in the Printing-Writing Division Recycled Content Initiative, particularly the aspect where the initial level is set at 10%. While Scenario A outlined in the question on capacity is the closest alternative, its overall net effect on increased recycling of print-writing papers would be to reduce the potential that exists for an even greater level of recycling than would otherwise be the case for the printing-writing grades. Scenario A, with definitional modifications as earlier mentioned, flexibility on levels and dates in the out years, and a broadening of the definition of commodity would be a very welcome boost to helping maximize printing-writing recycling.

Helping unravel a confusing development regarding use of the word "commodity" in the earlier draft Executive Order would also be a big incentive for printing-writing producers. With the exception of the four or five papers cited in the earlier draft EO as "commodity grades" and, therefore, out from under the 50% total recovered fiber requirement; all other true commodity grades will be subject to the 50% as well as a postconsumer content level. Under this approach, the EO disregards decades of worldwide industry nomenclature in using the term "commodity" which will wreak havoc and create untold confusion in an already confused and much, much larger private sector marketplace for printing-writing papers.

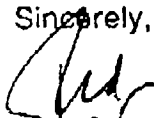
Extensive industry research shows that a confused marketplace is a known and acknowledged deterrent to the expansion of recycling in the printing-writing grades. The results of this research are what prompted the printing-writing producers to develop their initiative, which is simple in its definitions yet flexible, because it focuses on minimums and relies on marketplace competition to drive the recycled content levels higher, while allowing everyone to participate.

No other true commodity papers, other than those cited as such in the EO, will be considered by the marketplace as bona fide printing-writing recycled content papers. This is because of the improbability of many commodity machines to effectively use "50% or 10%" as their minimum. In this approach, the smaller machines get the advantage of higher numbers for total recovered fiber, while the bigger machines can be cost competitive but with lower levels. Remember, all the small machines are already in use, and they will not opt out of recycling. In fact, they will take their numbers higher. It's getting the big machines in that is necessary to significantly increase the supply of recycled-content printing-writing papers.

In conclusion, we are committed to moving appreciably forward on recycling and will, later this year, announce a new national goal which carries us well beyond the 40% recovery we will have achieved later in the year. Our President and Vice President can play a significant role by demonstrating leadership which fosters industry expansion into greater use of recovered paper in the printing-writing grades. This can be a win-win for all involved. If printing-writing producers are allowed to move into recycled content on their commodity machines at achievable levels, the industry is confident that competition will move those levels up. Recycled content levels moving higher across the broad base of printing-writing machines is the objective. President Clinton can make it happen.

Thank you for allowing us to provide input into the development of the Executive Order. Please call if there are any questions regarding the materials outlined herein.

Sincerely,



Red Cavaney
President

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM
BROWNING FERRIS INDUSTRY**

September 24, 1993

RESPONSES OF BROWNING-FERRIS INDUSTRIES
TO QUESTIONS REGARDING RECYCLED PAPER
REGARDING
EXECUTIVE ORDER: FEDERAL ACQUISITION, RECYCLING AND WASTE
PREVENTION

I. Definitions: Emphasis on Postconsumer

The federal government could choose from two definitions for defining recycled content to ensure the maximum utilization of postconsumer material. The first, a strict "postconsumer content only" definition, would not allow for any credit for preconsumer recovered materials to count toward recycled content. The merits of a postconsumer-only approach are clear: preconsumer recovered materials have been incorporated in new paper products for many, many years. The point of a federal initiative is not to ratify existing practices but to stimulate the government and the private sector to be more progressive.

The need to "close the loop" on recycling, cited by both Vice President Gore and Administrator Browner in recent remarks about recycling, would tend to lead to a strong emphasis on a postconsumer-only approach. Why? Because the "loop" that needs closing refers to the fact that individuals throughout the country are sorting recycled materials, but that such materials, once sorted, are not easily finding markets. Assuming the President has not deviated from his objective of stimulating recycling, a strong emphasis on postconsumer utilization is, by our reckoning, the only way to achieve his objective.

The President and others in the Administration recognized during the campaign and through his Earth Day speech that several thousand municipal recycling and commercial office paper programs were collecting exclusively postconsumer materials, and that demand for these materials simply was not keeping up with supply. It was this understanding, presumably, that prompted the President and Vice President to commit in Putting People First to "create and expand markets for recycled products by providing revenue-neutral tax incentives which favor the use of recycled materials whenever possible."

While the proposed Executive Order would not address the issue of tax incentives in connection with recycling, the upshot is the same: paper manufacturers can strive to meet slightly ambitious federal standards (in this case 15 percent and up) and thus avail themselves of an increased market (just as they could strive to obtain tax incentives), but the market would still be voluntary -- no one would be forcing paper manufacturers to do anything.

A second definition would recognize that there may be some mills that would have great difficulty in achieving this slightly ambitious postconsumer-only standard but nonetheless can achieve

RESPONSES OF BFI
PAGE 2

fairly aggressive preconsumer standards. For them, there may be merit in developing a "dual standard" definition, under which they could meet a federal standard by achieving an overall recovered materials level that is quite high, so long as there is a minimum postconsumer content standard that itself is an improvement on current practices. That is, there is no value in codifying the status quo (e.g., 10 percent postconsumer utilization), but neither should mills lack an incentive to utilize recovered materials in new products.

The trick is how to expand the use of postconsumer materials without creating disincentives to using preconsumer materials. BFI believes it may be easier to implement an aggressive postconsumer-only definition. We recognize, however, that large integrated manufacturers of printing and writing paper may encounter greater technical limitations on their use of postconsumer materials than some specialty manufacturers. The large integrated manufacturers may need to modify equipment or change operating practices when requirements for the use of postconsumer materials exceed 20 percent. Some specialty manufacturers are able to use 100 percent postconsumer or preconsumer materials with relative ease.

There is a role for both. Indeed, it is beyond dispute that the integrated manufacturers, because of their size, are capable of using far greater absolute amounts of postconsumer materials than do specialty manufacturers. The dual standard would give the bigger integrated manufacturers an incentive to use postconsumer materials and not discourage specialty mills. There is probably not time to develop fully all the details of a dual standard in the brief time before the Executive Order is to be published.

As a rule, state definitions and private procurement guidelines target almost exclusively postconsumer material. Having a uniform federal, state and local definition would help state and local governments improve markets for recyclables and lower their procurement costs.

II. Capacity Constraints: None on the Collection and Sorting End

BFI does not believe that any of the scenarios presented would create significant capacity constraints in general. We have no reason to anticipate that there would be capacity constraints regarding collection or sorting of postconsumer materials -- our phase of the business -- nor in pulping or milling them into paper -- the phase with which we are becoming quite familiar.

The one constraint that could develop would be capacity problems for some of the large integrated paper manufacturers when the postconsumer content standard climbs above twenty percent, particularly for coated papers. Given the lead time stated in the

RESPONSES OF BFI
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various scenarios, however, there should be no technological or economic barriers to meeting the stated standards.

III. Job Creation

This Executive Order entails no mandate; it is merely an issue of making a market more or less attractive for certain mills. For that matter, source reduction efforts by the federal government (e.g., mandated double-sided copying wherever feasible) could fundamentally reduce demand for paper, but no would-be supplier could be heard to complain that such a change would curtail job creation.

Assuming we are correct in believing that a 15 percent postconsumer standard is now technologically feasible, it stands to reason that a 15 percent standard immediately should cause no aggregate job loss. We express no opinion regarding job creation in the paper industry in the "out" years under any of two scenarios. The federal government is undoubtedly the single largest purchaser of paper. Nonetheless, it accounts for a very small percentage of overall paper purchased, so the impact of changed government procurement policy should not be substantial.

For the same reason, gains in employment in collection, sorting and processing postconsumer materials will occur, albeit modestly. Because there is under-utilized capacity in the existing collection and sorting infrastructure, the initial gains are likely to be less in the area of job creation than in increased efficiency. The more aggressive the recycling scenario, the greater the job creation from the standpoint of the recycling industry.

Job creation will come in the area of sorting personnel, often individuals who otherwise find it most difficult to escape unemployment, such as those on welfare, some with disabilities. Modest job creation could result from the need to manufacture and install equipment used to collect and sort postconsumer materials. Modest job creation is also likely ultimately in connection with the manufacture and installation of high-tech equipment used to de-ink and pulp postconsumer materials.

IV. Cost to the Federal Government Need Not Increase

Making paper from postconsumer paper rather than from virgin sources of fiber need not increase the cost. In addition, the cost of equipment to de-ink and pulp postconsumer paper is less than one-half the cost of equipment that utilizes virgin fiber sources. Finally, there is sufficient capacity throughout the country to ensure that the federal government will have a supply of paper with the requisite recycled content and a price consistent with the

RESPONSES OF BFI
PAGE 4

price paid historically for virgin printing and writing papers. Therefore, there is no reason that postconsumer standards should necessarily lead to additional costs to the federal government.

There may well be large mills that, without modifications, cannot now be utilized to furnish paper with the requisite level of recycled content in scenarios A-C. But it does not mean that the federal government has to pay more. It only means that the federal government will be procuring these materials from mills that can produce paper with the requisite level of recycled content at prices no higher than today's virgin paper prices.

V. Incentives

Our understanding is that the postconsumer percentages for each scenario presented are well within the technical abilities of the majority of the major integrated paper mills. In the "out" years, however, there may be a divergence between smaller specialty mills and large integrated mills. A number of smaller mills today are capable of much higher levels of postconsumer content (up to 100 percent), and will be able to easily meet these levels now and in the future. In contrast, we understand that at postconsumer levels above 20 percent, there may be a need for larger integrated mills to make technical modifications to machinery or operational changes. Given the time for implementing these changes, it is our belief that the various scenarios should not present technically challenging requirements.

* * *

BFI wants to make clear that the issue of chlorine free paper is one toward which we express no views.

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM
CONSERVATREE PAPER COMPANY**

September 24, 1993



Conservatree Paper Company

Environmentally Sound Paper

TO: Ken Connolly, White House Environmental Policy Office
FROM: Alan Davis, President, Conservatree Paper Company
RE: Questions Regarding Recycled Paper
DATE: Friday, September 23, 1993

Thank you very much for inviting me to participate in the roundtable discussion regarding the content standards for federal procurement of recycled printing and writing paper.

All of the significant issues listed in "Questions Regarding Recycled Paper" are addressed in our memorandum "Agenda 2000: An Effective Recycled Paper Procurement Policy" submitted to your office last June. We attach a copy for your reference.

Conservatree has had seventeen years of experience in every aspect of the recycled paper business. Our perspectives are unique due to the role we have played in creating a market for recycled printing and writing paper. We have been on the front lines with recyclers, paper manufacturers, distributors and most importantly, consumers, including the federal government and its state counterparts throughout the country.

The following summarizes our concerns and responds directly to the specific issues your office now raises. It is based on the assumption that the underlying goal of the White House is to maximize postconsumer consumption so as to make substantial reductions in the twenty million tons of printing and writing paper that annually goes to landfills and incinerators.

Definition:

The more than six dozen businesses, government agencies and organizations which have endorsed the "Mobro Principles" agree that a two-part standard (requiring a percentage of both postconsumer and total recycled content) is the best way to maximize diversion from dumps and incinerators without disrupting existing markets for preconsumer materials. It guarantees that: 1) not less than 50% of the paper fiber is derived from recycled materials; 2) at least some postconsumer material is used; and 3) allows industry flexibility in determining how best to meet the recycled content requirements based on economic and market factors.

However, in the spirit of compromise and cooperation, we will accept a postconsumer-only standard, but only if the percentage content requirement is high enough to have an impact on solid waste reduction and consumers are not misled about the recycled content.

A 1992 survey conducted by Conservatree Information Services and the National Association of State Purchasing Officials demonstrates that many states already have procurement policies consistent with the standards and definitions we propose.

Whatever standard is chosen, definitions of the term "recycled" must be sufficiently narrow to encourage demand for materials that are not currently being reused. This would be consistent with the positive steps the U.S. government has already taken through the

Federal Trade Commission (FTC) guidelines. The paper industry terminology of "processed recovered fiber" is probably inconsistent with the FTC approved definition of "recycled" and definitely violates the spirit of those guidelines which emphatically distinguish the term "postconsumer" to protect its integrity.

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Since 1976... The Leader in Quality Recycled Paper

Conservatree Recycled Paper

Capacity

It has already been demonstrated that papers in Scenarios "A", "B" and "C" can all be made on small paper machines. Since the federal government only purchases one percent of the nation's total output of printing and writing stock, the entire supply could be met using existing equipment. Capacity constraints are not a significant factor.

The ability to meet similar standards on large paper machines is a function of management commitment not technology. Based on our experience of introducing to market virtually all the new grades of recycled paper created in the past decade and an half, the industry is technologically capable of manufacturing virtually any printing and writing product, for which there is adequate demand, from twenty percent or more postconsumer material.

Jobs

Since no company is forced to bid on federal contracts, no mill will be required to change its production processes. Thus, there should be no dislocation within that segment of the pulp and paper industry.

If the total percentage of fiber coming from postconsumer sources increases, there may be some job loss among timber harvesters. However, that should be more than offset by an employment increase in occupations which collect and process materials now part of the solid waste stream.

Across the country from Seattle to Boston, many municipal recycling programs are in severe trouble due to lack of markets for the materials they have collected. Employees are being laid off as revenues from diverted materials decline. Increasing the demand for postconsumer paper will reverse this trend and lead to additional positions being created -- in this sense, a strong federal recycled paper procurement standard is a job creation program.

Costs

The price of recycled paper, like any other commodity, is a function of the intersection of supply and demand at a specific point in time. The precise additional cost, if any, at some future date can not be accurately projected since it depends on factors in the larger marketplace such as the overall level of economic activity (and, hence, paper consumption).

A rough estimate is possible, however, based on the recycled paper procurement programs of several large states which have been in operation over the last decade. In New York, for example, which has a price preference for recycled paper (along with relatively tough standards and definitions), the additional cost has been on the order of 2-3%.

The cost to manufacture recycled pulp has always been, over an extended period of time, competitive with virgin pulp production. The cost differentials between recycled and virgin paper is solely the result of the paper industry investing almost exclusively in integrated virgin paper mills over the last decade.

Estimated expansions of paper production capacity over the next decade could meet projected future demand for recycled paper. Federal government guidelines for postconsumer standards set at reasonable percentage requirements could stimulate future investment into cost-competitive recycled paper.

A significant increase in aggregate demand for recycled paper would lead manufacturers to shift production to larger, state-of-the-art, paper machines. This should, in turn, reduce or eliminate any cost differentials due to economies of scale.

Incentives

We have previously explained that a ranking system is the best way to create incentives for consumers to purchase (and, thus, mills to manufacture) papers with higher percentages of recycled content. Absent that sort of formula and labeling scheme, a standard which begins at fifteen percent or higher and escalates over time may encourage additional mills to convert existing paper machines or add new capacity to utilize recycled fibers.

A ten percent postconsumer standard, as in Scenario A, would produce negative incentives for the production of additional recycled printing and writing paper since it is lower than the level already obtainable in the marketplace. In fact, it is inferior to the requirement of both Canada and the state of California. This proposal would be a step backwards and the death of paper recycling in the United States.

If we are to have a postconsumer-only standard, only Scenario C of the options presented provides adequate incentives to move the paper industry forward. Even then, the Administration should go on record supporting an immediate fifteen percent postconsumer content standard. Anything less would fall short of the Clinton-Gore campaign's commitment to build a recycling economy.

■ ■ ■

Despite tremendous public interest and concern, recycling programs are on the verge of collapse due to insufficient markets for the collected wastepaper. Federal government leadership is the only way to turn this situation around. Scenario C, with the addition of an immediate fifteen percent postconsumer content standard, is the sole option that meets this test.

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM
ENVIRONMENTAL DEFENSE FUND**

September 24, 1993

Responses to Questions Regarding Recycled Paper

John Ruston, Lauren Blum, Barbara Olshansky
Environmental Defense Fund

Resa Dimino
Environmental Action Foundation

The growth of paper recycling offers Americans a range of benefits, including reduced solid waste disposal costs, savings of water and energy in paper production, reduced pollution from paper manufacturing and disposal, and less demand for turning natural forests and wetlands into tree plantations. This Executive Order offers the administration a chance to lead by example and reap all of these benefits, not by spending more, but by spending more wisely.

In replying to the questions posed by the Office on Environmental Policy, we realize that the economics of paper production and recycling are in a state of transition. Large new supplies of office waste paper are entering the market, new deinking technologies are being developed, and consumer demand for recycled content-paper is rising.

In the long run, these technological and economic factors will determine the ultimate quantities of recycled paper production. Whatever standard is chosen for federal purchasing, it will not compel paper producers to make uneconomic investments. As the last five years of recycled paper production under an array of state and federal guidelines has clearly shown, paper manufacturers decide whether or not to produce recycled-content paper based on demand from their private customers and the economics of deinking at a particular mill site. The total amount of deinked pulp manufactured is determined by the optimal size of the deinking plant, technical parameters in blending recycled and virgin pulps in the finished paper sheet, the ability to source recovered paper, and the capacity of existing or planned paper machines. The level of the federal standard is used as a guideline in determining the blend of virgin and recycled pulps, but is not the factor that ultimately determines whether or not the deinking plant will be built.

For example, at its mill in Franklin, Virginia, the Union Camp Corporation integrates bleached kraft pulp with 2,000 tons of daily paper production. The company is incrementally increasing the production rates of its paper machines, a step that will require 300 additional tons of pulp per day. Because the marginal cost of adding deinked pulp is substantially lower than virgin pulp, Union Camp is adding a \$108 million deinking line to meet its new needs. Although the average deinked pulp production will thus be about 14% of the mill's overall paper output, on September 12, Union Camp announced at a national meeting of paper merchants that it would be producing printing and writing paper with 25% postconsumer content.

If a mill like this chose to blend virgin and recycled pulp at a lower percentage,

such as the 10% level suggested by AFPA, it would not change the size of the deinking installation. This step would, however, satisfy a larger increment of consumer demand for recycled paper, making it difficult for another recycled paper producer to fit into the same market.

There are now 22 announced plans to build deinked market pulp facilities in the 150 to 600 ton-per-day range in North America.¹ Obviously not all of these will be built, and a handful of projects have already failed to obtain financing. However, a significant number of these projects are sufficiently along in siting, permitting, and assembling financial packages that an assertive Executive Order would significantly strengthen their ability to go forward. One developer, who has lenders, equity, permits, and public hearings all either lined up or completed, told us that his potential buyer for the deinked pulp is waiting for the Order to be issued before signing a contract, which is required to close the financing of the plant.²

One manufacturing job is created for every four tons of daily deinking capacity in operation, and one additional job for is created for every four tons of daily paper processing (sorting and bailing capacity) required to furnish a deinking plant. With 25 million tons of printing and writing paper to be consumed annually in the United States, by 1995, a significant increase in the amount of deinked pulp used would have a healthy impact in creating high-skilled manufacturing jobs, not counting jobs in construction and affiliated equipment supply industries. Indeed, because industry consolidation and a trend toward larger and larger paper machines eliminated 12,000 manufacturing jobs in the paper industry in the 1980-1990 period, recycling is perhaps the only net source of new jobs that the paper industry will offer in the 1990's.

I. Definition

What definition of recycled content should the Federal government use in order to ensure the maximum utilization of postconsumer material (pcm)? How does this relate to current practices at the federal, state and local level, and in private paper purchasing initiatives?

A. The Postconsumer Definition Provides the Greatest Incentive for Paper Producers -- Individually and in the Aggregate -- to Remove Material from the Waste Stream

In 1990, 97.6% of paper waste sent to landfills or incinerators came from postconsumer sources (52,690,000 tons per year of postconsumer paper were disposed, compared to 780,000 tons of over-issue paper products and 469,000 tons of converting scrap).³ In the same year, less than 28% of postconsumer paper generated was recovered for recycling, compared to 62% for over-issue paper and 94% for converting scrap. (Due to growing demand for over-issue magazines in manufacturing recycled newsprint, Franklin Associates expects the recovery rate for over-issue paper products to be 83% by 1995.)

Clearly, the recovery of additional quantities of postconsumer paper is the only way to relieve the current burden on disposal facilities. Postconsumer fiber is generally more

contaminated and less certain in its fiber composition that preconsumer paper across roughly comparable grades. Because of these factors, postconsumer fiber is generally less desired for use by printing and writing paper mills, and tends to sell for less in the recovered paper marketplace (e.g., overissue newspapers have a higher value than newspapers collected from curbside recycling programs).

A strict postconsumer standard provides the greatest credit in the marketplace to mills that make the investment in research and development and technology to recycle difficult-to-process postconsumer paper. Broader definitions of recycled content would create barriers to entry for mills that invest in postconsumer deinking, since under a broader definition the market would recognize no difference between paper made from difficult-to-process postconsumer material and that made from preconsumer material that has been routinely recycled for decades.

Empirical validation of this theory is shown in the recent experience of Ponderosa Fibres of America, Inc. Until 1990, Ponderosa was the only major producer of deinked market pulp in the United States. At four mills, Ponderosa received primarily printed preconsumer material, removed the ink and other contaminants, and sold the end product to tissue mills. All four mills produced roughly 295,000 tons of pulp per year, and the source of the fiber used was not a concern. After 1989, responding to market demand for postconsumer recycled content in printing and writing paper, Ponderosa began intentionally buying postconsumer fiber, and now has shifted 80% of its business to supplying producers of printing and writing grades. Most importantly, Ponderosa had to upgrade its equipment to handle the cheaper but more contaminated postconsumer paper it now receives, investing \$4 million at just one facility for new fiber cleaning equipment.⁴ Since the overall recycling rate in the United States has grown steadily since the late 1980's, the preconsumer fiber Ponderosa used to use is now being exported or consumed by other mills, most likely tissue manufacturers. The explicit focus on postconsumer content provided a direct incentive for Ponderosa to effectively reclaim paper waste that a few years ago was going to landfills.

B. The Postconsumer Definition is Well-Established in Federal, State, and Local Law and in the Private Marketplace

For many years, the vast majority of federal, state and local laws and regulations and private market initiatives have used a strict postconsumer definition as the basis for recycled content standards. This has long been viewed as the salient threshold for ensuring the accuracy and significance of claims of "recycled content" made in environmental advertising.

At the federal level, the emphasis on postconsumer materials as the appropriate basis for procurement standards was codified in 1976 in the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 *et seq.* ("RCRA"). Under RCRA Section 6962(c), federal, state or local procuring agencies using federal funds to procure paper products are specifically enjoined to purchase those products that contain "the highest percentage of postconsumer recovered materials." Following a 1987 lawsuit initiated by the Environmental Defense Fund, the U.S. Environmental Protection Agency (EPA)

promulgated federal purchasing guidelines pursuant to this Section. These guidelines specify postconsumer content standards for all grades of paper except for printing and writing papers.

In addition, thirty states currently purchase printing and writing paper with at least ten percent postconsumer content.⁵ Although specific statutory language may vary from state to state, all of the definitions of "postconsumer" are consistent with that set forth in RCRA and specified in the July 6 draft of the Executive Order.⁶ At least 41 local governments specify postconsumer content in the printing and writing paper they purchase as well.⁷

As shown in sections below, the postconsumer definition is the de facto standard in the private market. This is in part due to the fact that a number of states have used postconsumer definitions in their environmental labeling laws. For example, in 1990, California adopted a landmark statute in an effort to regulate environmental marketing claims. (California Business and Professions Code Section 17508.5 (West 1988).) The California statute represents an effort to reduce the environmental burdens associated with the production and disposal of consumer products by ensuring that consumers receive truthful, accurate, and significant information on product labels and in advertising. To this end, the statute sets definitional standards for claims of biodegradability and photodegradability, and sets a ten percent minimum postconsumer content standard for products labeled "recycled." Other states have established programs that link postconsumer standards to the use of specific environmental symbols or terms in an effort to create incentives for manufacturers to use greater amounts of postconsumer materials in their recycled products. (See e.g., New York State Department of Environmental Conservation Regulations on Recycling Emblems, 6 New York Code of Rules and Regulations Part 368.)

C. Adopting the Proposed AFPA "Processed Recovered Fiber" Definition Would Be A Great Leap Backward For Recycling

Despite the wide prevalence of the postconsumer definition, the American Forest and Paper Association (AFPA) has put forward a proposal for a new definition, "processed recovered fiber." This new definition does not constructively address the solid waste management problem faced by municipalities in this decade. The Recycling Advisory Council (RAC) analyzed and rejected a similar proposal in 1991. The RAC took this action in part because the classification was so vague and broad that almost every type of paper made could arguably contain some type of "contaminant" that did not in fact pose a major problem in recycling.⁸

Under AFPA's assumptions of industry participation, employment of a 10% processed recovered fiber standard would result in the estimated use of recovered fiber by the U.S. paper industry in 1995 of only 1.7 million tons. This amount is less than the amount of converting scrap and over-issue material derived from printing and writing paper sources that is projected to be recovered in that year, 1.84 million tons.⁹ In other words, *AFPA's own 1995 projection for the use of processed recovered fiber would be met without using any postconsumer paper at all.* Such a proposal does not contain sufficient incentive to advance the state of the art in deinking technology or the scope of deinking

investment.

Some paper companies have contended that it is impossible or prohibitively expensive to track the use of postconsumer fiber in papermaking, or that a postconsumer definition can be subverted by unethical recovered paper brokers. Neither of these arguments provide a credible reason to change the definition, especially for the production of printing and writing paper, where high quality requirements necessitate careful monitoring of recovered paper entering a mill. Our reasoning is outlined in the endnotes.¹⁰

II. Capacity

What capacity constraints, if any, might arise assuming the executive order mandated all agencies to procure recycled printing and writing paper containing the following levels of postconsumer material?

Scenario A: - a 10% pcm standard immediately
 - a 15% pcm standard by January 1996
 - a 25% pcm standard by January 1999

Scenario B: - a 15% pcm standard by January 1996
 - a 25% pcm standard by January 1999

Scenario C: - a 20% pcm standard by January 1995
 - a 30% pcm standard by January 1999

There are essentially no capacity constraints for meeting any of these standards for federal purchasing in the near term (assuming some time for adjustments in government bidding practices and paper manufacturer response). Total federal paper purchasing is estimated at 300,000 tons per year. As discussed in the section below, in the United States there are currently more than 700,000 annual tons of integrated and non-integrated capacity to produce pcm deinked pulp. At a 30% recycled content standard, it would take 76,500 tons of deinked pcm pulp to supply the federal market.

The quality of deinked pulp available should also not be a problem. As discussed in Attachment 1, deinking technology has improved dramatically in the last three years. In addition, the removal of the 50% total recycled content requirement will improve paper quality. This is because most mills obtain preconsumer fiber for meeting the 50% total recycled content requirement by saving and then repulping the unprinted trim from paper converting operations and obsolete or damaged inventory. The cellulose fibers used in paper are like hollow tubes; when dried and repulped they tend to collapse and lose some of their strength and bonding properties. In a deinking operation, the addition of sodium hydroxide in the hydropulper causes the fibers to rehydrate and swell, overcoming this problem. Deinked pulp can thus have better performance characteristics than pulp obtained from sources that do not require deinking.

Calculating the amount of recovered fiber required under the different scenarios is

simply a matter of arithmetic, taking into account that because paper contains 15-30% coatings, filler and sizing, the quantity of deinked pulp required is less than the percentage of postconsumer content by fiber weight.

Some paper documents produced by the federal government use groundwood rather than free-sheet paper (e.g., the Congressional Record, Federal Register, income tax preparation manuals and some computer forms). Because there are now more than 30 newsprint or specialty groundwood mills producing paper with recycled content in North America, it would be easily achievable to incorporate recycled content levels of 40% or higher in these documents.

III. Incentives

Will the above listed pcm standards for recycled printing and writing paper create the right incentives to ensure that mills of differing sizes begin to use pcm in the production of paper? Is there a better alternative? (Please complete for each of the above scenarios.)

These questions are very important, and have yet to be fully addressed with clear thinking and assumptions. To answer, we must consider four factors, in sequence:

1. How federal standards are actually considered by buyers and sellers of paper in the private market;
2. Technological and economic trends in the printing and writing paper segment of the United States paper industry;
3. Technological and economic factors with respect to potential recycling investments faced by different types of producers within the printing and writing paper segment of the paper industry, including:
 - non-integrated paper mills currently making virgin paper products
 - integrated virgin pulp and paper mills producing on large scale paper machines
 - integrated virgin pulp and paper mills producing on intermediate and small scale paper machines
 - manufacturers of virgin bleached market pulp;
4. The basis and scope of consumer demand for recycled-content paper in the private marketplace.

Considering the four factors above, it becomes clear that the federal standard (level of recycled content) is not the most important factor in determining whether an individual paper mill installs deinking equipment or buys deinked market pulp. Once the decision to produce recycled-content paper has been made, the federal standard is at best a rough guideline in determining the level used in blending virgin and recycled pulps. The decision to produce paper with postconsumer content varies according to the specifics of the mill. Although many producers may not be able to economically incorporate deinked pulp in the near term, examples exist for mills in each of the four categories above; these are discussed in the sections below.

It is also important to understand that the factors now changing the paper industry are all very new. Deinking systems for removing photocopy and laser-jet printer inks (which are actually plastic polymers bonded to the paper sheet) have been operating at a commercial scale for about two years. Driven by increasing disposal costs, substantial new quantities of waste paper have entered the market since 1988. Adjusted for inflation, recovered paper prices are at their lowest in the post-war history of the industry. The rise of environmental consumerism also dates to about 1989.

It is also clear that in some cases, installing deinking equipment or buying deinked market pulp is a profitable investment for paper producers. By the end of the decade, the effect of the federal standard in the private market will diminish, as deinking technology, fiber supply and the economics of paper production enter into a more stable balance.

A. How the Private Market Responds to Federal Standards

Under the scenario put forward by AFPA, the implicit reasoning is that the recycled-content standard for the federal government's purchasing of paper for its own use will become the *de facto* standard in the private marketplace *at a uniform level*. AFPA assumes that, when determining whether to invest in deinking facilities, paper producers will look at this standard and decide to either produce or not produce paper with recycled content at that level (and, implicitly, at that level only). Therefore, the argument goes, a lower standard will engender greater participation, and possibly greater aggregate use of recovered fiber.

The critical flaw in this argument is the assumption that the federal standard will become the *uniform* standard in the private marketplace. Five years' experience with the current federal purchasing guidelines set by the EPA shows empirically that this is absolutely not the case. In reality, paper manufacturers decide whether or not to produce recycled-content paper based on demand from their private customers and the economics of deinking at a particular mill site. The total amount of deinked pulp used is determined by the optimal size of the deinking plant, technical parameters in blending recycled and virgin pulps in the finished paper sheet, the ability to source recovered paper within the region of the mill (which can be 500 miles or more), and the capacity of existing or planned paper machines. The level of the federal standard is used as a guideline in determining the blend of virgin and recycled pulps, but *is not the factor that ultimately determines whether or not the deinking plant will be built*. Consider the following examples:

Tissue. The current U.S. EPA standard for postconsumer recycled content in tissue products is 20% for napkins, 40% for paper towels and 20% for bathroom tissue. The Fort Howard Corp. is by far the largest manufacturer of recycled tissue products in the United States. Fort Howard's three large mills consume 1.25 million tons of recovered paper per year and have consistently earned operating profits that are among the highest in the paper industry. In order to penetrate the "at home" market for tissue products, Fort Howard has developed the Green Forest™ brand, which has a minimum of 10% postconsumer content. Serving another market segment, Fort Howard has also developed the Envision™ line of tissue products, which have a minimum of 95% recycled content. Though Fort Howard could produce at the level of the federal standard, their actual production choices appear little related.

Recycled clay-coated folding cartons (e.g., cereal boxes). The EPA guideline for this grade is 80% postconsumer content. In reality, boxboard producers use a relatively wide range of postconsumer content, depending on the manufacturer and mill. Major producers of cereal and laundry detergent like General Mills, Kelloggs, Proctor & Gamble and Colgate have thus decided to label their recycled cartons "minimum 35% post-consumer content" in addition to labelling the total recycled content.

Paper bags. The current EPA standard for paper packaging which includes paper bags, is 5% pcm. McDonald's is now using brown, unbleached 100% recycled paper bags with 50% postconsumer content; Burger King is using bags containing 65% recycled postconsumer newsprint and 35% bleached virgin fiber.

Printing and writing paper. The current EPA guideline is 50% "wastepaper" (there is no postconsumer requirement). The standard that has evolved for many paper products in the private market is 50% total recycled content, 10% postconsumer content. However, there is a wide divergence of grades beyond this 50/10 standard. The paper industry consulting firm Jaakko Poyry Consulting Inc., maintains the Recycled Grade Finder, a comprehensive listing of different brands of recycled-content printing and writing paper that is based on extensive surveys of paper users and producers. The Grade Finder now lists more than 400 different brands of recycled-content paper, including lines produced by all of the major U.S. manufacturers (some of the grades are produced by the same mill but distributed under different brand names). The majority of the grades listed have 40% preconsumer content and a minimum of 10% postconsumer content. However, between grades that are 100/0 and 0/100 in their pre- and postconsumer content levels, there are 77 different permutations listed. Other significant grades include 0/100, 50/50, 30/30, 25/25, 85/15, 35/15, 90/10, 50/10 and 50/0.

Finally, during 1988-1993 when the federal government used a printing and writing paper guideline that had no postconsumer content requirement and was clearly unworkable for steady-state production on large paper machines, manufacturers nonetheless began and/or completed construction on more than a dozen deinking operations oriented to printing and writing grades.

The fact is, private buyers and sellers of paper will always be able to negotiate recycled content levels that diverge from the federal guideline if it is in their interest to do so. *Setting a standard for the federal government's own purchasing that is reasonable but slightly leads the market does not compel any mill to make an uneconomic investment in recycling.*

B. Technological and Economic Trends in the Printing and Writing Paper Segment of the United States Paper Industry

More than 80% of the printing and writing purchased by the Federal Government is uncoated free sheet or white business papers. These papers dominate the printing and writing paper category with 52 percent of total printing and writing paper capacity in 1991.¹¹ This market is undergoing structural change as mills install large, wide and fast paper machines to produce commodity grades at a low cost per ton. In 1975, 72.5% of printing and writing paper capacity (including uncoated groundwood and coated papers) was produced on machines of 75,000 tons per year (tpy) or less with only 7.5% of total industry capacity produced on machines over 125,000 tpy. By 1989 these percentages had changed dramatically -- 40% of total printing and writing capacity was produced on machines producing under 75,000 tpy and 38% over 125,000 tpy.¹²

However, despite the attention given "commodity machines" in the current debate, a large quantity of printing and writing paper is still produced on intermediate and small capacity machines. Table 1 compares the distribution of machine sizes in the printing and writing sector compared to unbleached linerboard (used in making corrugated boxes and grocery bags) and solid bleached sulfate paperboard (e.g., milk carton stock).

The definition of a "commodity scale machine" has changed as machines have grown larger, but as Table 1 shows, 48% of all printing and writing paper is made on machines with a capacity of 100,000 tpy or less. A markedly higher proportion of true commodity scale machines are used to produce bleached and unbleached paperboard. Why the difference? Commodity machines work best when they are turning out the same product day in and day out. Linerboard has a much less complicated grade structure than the very broad category known as "printing and writing paper," within which there are many different kinds of products. In some printing and writing grades, smaller paper machines provide "a competitive advantage, because large-scale paper machines are less flexible in shifting production to meet less predictable and fast-turnaround special order flows and high-priced, limited-volume specialty paper production runs."¹³ What is happening in the printing and writing sector is that large machines are out-competing intermediate-scale machines in commodity grades, and intermediate machines are displacing small machines in specialty grades.

From 1971 to 1990, 156 printing and writing machines with an average of about 18,000 tpy capacity were shut down.¹⁴ Paper machines are controlled by computers; since the number of people required to run a paper machine (watch the computers) remains roughly the same regardless of the size, there has been a constant loss of jobs in this segment of the paper industry.

Table 1. Size of Machines by Principal Grade Produced
(capacity in thousands of short tons)

Printing & Writing Papers			Unbleached Kraft Paperboard		Solid Bleached Sulfate Paperboard	
Number of Machines	Share of Total Capacity		Number of Machines	Share of Total Capacity	Number of Machines	Share of Total Capacity
TOTAL	407	100%	69	100%	26	100%
0-5	35	--	--	--	--	--
6-10	30	1	--	--	--	--
11-15	18	1	--	--	--	--
16-20	16	1	--	--	--	--
21-30	54	5	--	--	--	--
31-40	42	6	--	--	--	--
41-50	30	5	--	--	1	1
51-75	62	15	--	--	3	4
76-100	42	14	2	1	2	3
101-125	20	9	3	2	--	--
126-150	19	10	2	1	--	--
151-200	22	16	8	7	10	33
201-250	11	9	8	9	5	22
251-300	5	5	9	12	1	5
301-400	1	1	24	40	2	13
over 400	--	--	13	29	2	19
TOTAL	25,052		22,029		4,922	
CAPACITY						

All data based on machines in place January 1991.

Source: American Paper Institute, Paper, Paperboard, Pulp Capacity, 1991-1995, 33rd Annual Survey, New York, 1992, p. 8, 22.

While large machines can produce large quantities of paper at very low costs they "sometimes have negative market consequences if too much capacity comes online, as in the 1990-91 period, which also coincided with the economic recession."¹⁵ Uncoated free sheet producers essentially created their own oversupply problem when four large uncoated free sheet machines with a total annual capacity of 1.1 million tpy, or 8.8% of total existing capacity, came on line in 1990 and 1991. This capacity was probably planned around 1987 or 1988 when uncoated free sheet mill net prices jumped from \$658 to \$807 per ton. Operating rates hovered around 93% to 94% as uncoated free sheet prices rose to a high of \$860 per ton in 1989.

With the introduction of so much new capacity from September 1990 to September 1991, the market shifted from a seller's market as operating rates dropped to 88% and the average annual price for uncoated free sheet reached \$652 per ton, a drop of 24% from the 1989 high. Prices and operating rates are expected to remain low through 1993 with an average price of \$598 per ton.¹⁶ At these unusually low prices, most mills producing uncoated free sheet are operating at a loss. Increasing imports from Mexico and Brazil (the United States is a net importer of uncoated free sheet)¹⁷, only make the situation worse for small and medium sized mills. This scenario is a classic example of "the tragedy of the commons" where rational economic behavior of a few companies seriously damages the long-term well-being of the entire industry segment.

C. Economically Viable Strategies for Utilizing Deinked Fiber in Different Segments of the Printing and Writing Paper Industry

Given these changes already taking place, where does recycling fit in? In sum, increasing quality and consumer acceptance of recovered fiber content in paper has actually given mills more flexibility to expand capacity economically because mills can choose from a wider range of pulps.

The "delicate balance" between pulping and paper making operations at an integrated pulp and paper mill has been offered in the current dialogue as a justification for a lower standard, implying that a higher standard would force some mills to shut down their pulping capacity. In fact, the situation is more complicated than this, and bears closer inspection. Under certain conditions, economically viable opportunities to install deinking systems arise at mills in all configurations.

The cost and size of key pieces of equipment determine the capacity for a paper mill or any production facility for that matter. When a company builds a greenfield (brand new) integrated paper mill, the most expensive piece of equipment is the paper machine itself. State of the art paper machines cost upwards of \$250 million dollars. Thus, unless the mill plans to sell market pulp, the size of the pulp plant is determined by the size of the paper machine. The recovery boiler, the specialized furnace that recovers the pulping chemicals and burns the organic waste generated during pulping, is the most expensive part of a pulp mill. New recovery boilers cost from \$75 to \$100 million dollars today.

Over the fifteen to twenty year life of this equipment, however, the paper machine is much more amenable to incremental increases in capacity than the pulp mill. By installing better machine controls, size presses or drying sections, for example, mill engineers can increase the running speed of the paper machine, thus requiring more pulp. Although investments in increasing machine speed can be made in relatively large increments at individual mills, on an overall basis they increase annual capacity by about 1.5% per year.¹⁸ This capacity increase amounts to 200,000 tons per year for the uncoated free sheet that the Federal Government purchases. While pulp mill capacity can be increased by debottlenecking various pieces of equipment, eventually the capacity of the recovery boiler limits the amount the pulp mill can expand.

The remainder of this section shows how the decision to invest in deinking

equipment or the purchase of deinked market pulp varies according to different mill scenarios.

1. Non-integrated or partially integrated paper mills

Non-integrated paper mills can incorporate deinked pulp most fairly readily. Since they purchase virgin market pulp, they already have the storage and repulping facilities required to use deinked market pulp. Both non-integrated and partially integrated mills can install deinked pulp capacity to meet their raw material needs if they want to make the capital investment. Their operating costs are lower and more stable since they are not purchasing pulp on the market. The quality of deinked fiber is actually higher than dried fiber or fiber from mill trimmings because the volume of the cellulose fibers is restored during exposure to alkali during the deinking process. Market pulp and mill trimmings are repulped in water only so that the collapsed fibers are not restored.

One recent example of a non-integrated mill that is installing deinking capacity is International Paper Co.'s mill in Lock Haven, PA. Coming on line in November of 1993, this mill will produce 90,000 tons of 100% recycled photocopy paper per year, with a 50% minimum postconsumer content. Because the paper contains groundwood fiber from old newspapers and magazines and is less bright, it will reportedly be selling at a discount to virgin paper.

As mentioned above, the economic scale for an integrated deinked pulp line ranges from 200 to 300 tons per day. Many mills in this scenario are too small to use this amount of pulp in their paper making operations. In this case, the mill has to decide whether to run the deinking equipment most economically and sell its pulp on the market or produce pulp on a smaller scale and use it internally. Burrows Paper in Little Falls, NY is an example of a small mill that is installing deinking equipment for its own use and to make market pulp.

The opportunities for using deinked market pulp in this sector are substantial. During poor economic periods in the printing and writing paper industry, 18-19% of total capacity is non-integrated; in 1989 this number rose to 27%.

2. Integrated commodity scale mills

For a recovery boiler limited mill that wants to increase capacity by 100 to 300 tons per day, it is economically efficient to add deinked pulp capacity. The capital costs per daily ton of capacity for deinked pulp are about 40% less than for additional kraft pulp capacity.¹⁹ According to a major industry study published in 1990, "Comparison of production costs for a 280,000-metric-tpy virgin fiber mill and a 150,000-metric-tpy recycled mill show a mixed competitive picture. Mills using higher-grade wastes generally have slightly higher costs than virgin fiber mills; however, if lower-quality waste can be used, secondary fiber can provide cost savings."²⁰ The advent of deinking systems for removing polymer inks has since allowed mills to use sorted office waste paper as a furnish, which is substantially less expensive than other high-grade deinking papers. As the technologies and the process knowledge are developed to produce high quality deinked

pulps from office wastepaper, operating costs will become more competitive with virgin kraft pulp.

The minimum economic scale of a pulp mill today ranges from 1250 to 1500 tons per day, so it is difficult to add small amounts of kraft capacity economically once the capacity of the recovery boiler has been reached. Optimal capacity for today's deinking equipment, however, ranges from 200 to 300 tons per day for pulp that is not dried, and 400 to 600 tons per day for air dried pulp that is sold on the market.²¹

Union Camp's Franklin, VA mill is one example of a large commodity scale producer that is adding deinked pulp to supply existing paper machines that are increasing their running speed. Union Camp's mill is the largest printing and writing paper mill in the world, and one of the most profitable in the United States. Construction has begun on this facility, which will be operational in February 1995. The Weyerhaeuser paper company has also stated that it will use recovered postconsumer fiber to meet additional pulp capacity requirements for all of its future expansions in printing and writing paper.²²

3. Deinking expansions at intermediate scale integrated mills

As with larger mills, capacity increases at intermediate size mills can also be fed with deinked pulp. Cross Pointe Paper Co.'s mill in Park Falls, WI is an example of a mill that is now taking this step. In some cases, these mills are probably running at relatively low capacity, below 90%. Given demand for a recycled end-product, these mills may be able to buy deinked market pulp and run at higher capacities without altering their virgin pulp production.

4. Manufacturers of virgin bleached market pulp

A number of mills currently produce more pulp than they can use in their paper machines to take advantage of the lower production costs of modern large state-of-the art bleached kraft pulp mills. International Paper's Selma, AL mill produces 492,000 tons of pulp annually. The mill produces paper with 240,000 tons of this pulp and sells the rest.

According to John Chrysikopoulos, Goldman Sach's Forest Products & Paper equity analyst, the market for virgin kraft pulp will remain poor because of a number of structural changes. New participants from Brazil and Chile are presently dominating the pulp markets with their low cash manufacturing costs. Indonesia, another low cost producer, will enter the market pulp business soon as well. (For economic reasons related to savings on chemicals, energy and water use, these new mills use totally chlorine free bleaching sequences.) Recent currency devaluations in the Scandinavian countries have made their products more competitive with North American pulps. With few permanent mill closures expected to take place in the next few years, supplies of market pulp will continue to outpace demand.

Thus, mills that produce excess pulp are integrating downstream -- they are adding additional machine capacity so that they can sell paper rather than pulp. The newest paper machines can make 360,000 tons of paper per year. At Selma, in order to install this

machine and significantly reduce their paper production costs, International Paper needed an additional 108,000 tons per year (300 tons per day) of pulp. The announcement that they would add a deinking facility at the Selma facility suggests that International Paper may use deinked postconsumer pulp to meet their pulp requirements.²³

D. The Scope of Market Demand

In recent years, consumers have begun to look for ways to translate their concern about environmental issues into action in their daily lives. As a result, significant numbers of consumers now consider environmental factors in their product purchasing decisions, and demand products and packaging that are less burdensome to the environment. Numerous surveys and opinion polls confirm that consumers are actively seeking environmentally improved products.²⁴ Consumer product manufacturers have responded to this surge in environmental preferences with a blizzard of advertising claims touting the environmental attributes of their products and packaging. According to Marketing Intelligence Service, Ltd., as of 1990, products making environmental claims were being introduced at a rate 20 to 30 times greater than that of other new packaged goods.²⁵

Considering the impact of environmental consciousness on the market for recycled-content paper, we can very roughly (and conservatively) estimate the total volume of demand for recycled-content printing and writing paper by the beginning of 1996 to be at least 5 million tons per year, out of a total consumption of 25 million tons.²⁶ We also assume that the vast majority of these customers are unwilling to pay a premium over any substantial period of time, although they may pay a slight premium (2-3%) upon buying the paper for the first time.

Under these assumptions, at a 10% overall average recycled content, 13.7 million tons of recycled-content paper can theoretically be provided, far saturating estimated market demand. Under these conditions, there would be less incentive for additional deinking projects to go forward, unless market demand for recycled paper is much greater than 5 million tons, or mills begin to compete for this market based on higher levels of postconsumer content (which would be undercut by a low federal standard). The impact of a higher standard is thus to accelerate the construction of deinking projects until market demand is saturated or the marginal cost to the paper industry of absorbing more deinked fiber becomes so high that recycling is priced out of the market.

IV. Jobs

What dislocation, if any, could be expected in the pulp and paper production industry if the executive order set the above listed pcm standards for federal purchases of recycled printing and writing paper? What level of job creation would this lead to in this and other industries? (Please complete for each of the above scenarios.)

As discussed above, the U.S. paper industry will continue to eliminate jobs as smaller mills are forced out of business by large integrated mills. Recycling thus offers

the only major net source of new jobs in the paper industry in the next decade. Within the paper industry, growth in recycling will have three different types of impacts.

First, adding deinking facilities will help some large virgin paper mills grow even larger, because deinking will make more fiber available for expansion. Due to constraints on its existing supply of pulp, for example, the International Paper Company could probably not install such a large (360,000 tpy) machine at its Selma, Alabama mill without the addition of 108,000 tpy of deinked pulp capacity. Thus, in some cases, recycling will accelerate trends already underway. However, this effect is more than counter-balanced by two others beneficial effects.

Recycling will help some non-integrated and medium-sized integrated producers gain greater economic viability. Most of the small and medium sized mills operating in the U.S. are in the "Rust Belt" of the Northeast and Midwest. The proximity of these mills to abundant sources of inexpensive recovered fiber and to markets for their final products is transforming the economic viability of paper production by substantially reducing transportation costs. (Transportation of paper from the mill to its end-market can cost between \$50-\$100 per ton, for a product that sells for \$500-800 per ton at the mill level.) The International Paper Company's mill in Lock Haven, Pennsylvania is a good example of this type of facility, which probably would have been headed for economic obsolescence if not for the installation of deinking technology.

The positive impact of recycling on preserving smaller mills has already been demonstrated in the recycled boxboard industry, which uses cylinder machines, an older technology, to produce multi-layer paperboard for folding cartons. In order to sell their products in recycled packaging, companies such as Procter & Gamble, Kodak, and Bristol-Myers Squibb have shifted some of their products into recycled clay-coated boxboard. Even in the midst of the recession, this has revived profits and growth in a sector of the paper industry that had otherwise been losing market share to virgin paper and plastic since the late 1960's. Increasing demand for recycled boxboard has also supported investments in more advanced recycling technology such as the James River Corp.'s multi-fourdrinier recycled paperboard machine, part of a \$90 million expansion in Kalamazoo, Michigan.

In addition, the operation of deinking facilities provides another source of job creation. A large deinked market pulp plant (400 tpd output of dried pulp) will employ approximately 100 workers, including 90 in salaried, high-skill manufacturing positions and 10 in hourly positions. Approximately 250 workers are employed in constructing a deinking plant of this size. The direct job creation impact of making deinked market pulp is thus about one job per four daily tons of capacity.

The recycling process itself is also an economic development instrument. Solid waste management imposes an economic cost on society. Within this reality, economic development specialists recognize that the expansion of recycling is the potential source of a number of benefits. These include: (1) the creation of a significant number of jobs in the processing of materials, especially relative to other waste management alternatives such as landfilling; (2) the addition of substantial value to recovered materials and diversification

and expansion of the manufacturing tax base through the growth of recycling-based advanced processing and manufacturing; (3) under efficient recycling collection programs, the avoidance of costs for waste collection and long-distance landfilling borne by local governments and businesses; and, (4) regional income retention through the substitution of locally generated recovered raw materials in place of imported virgin materials (such as paper pulp from Canada or plastic resin from the Texas Gulf).²⁷

Successful recycling requires, in sequence: (a) separation and collection of materials that would otherwise become solid waste; (b) intermediate processing to sort, clean, and compact materials for transportation and marketing; (c) manufacturing, using recovered materials as inputs; and (d) consumption of finished products containing recycled content.

Increased paper recycling will initially create some job growth in the collection phase, but as truck design and routing are optimized, recycling collection systems will simply substitute for garbage collection. This is especially true for materials like office paper, which is not putrescible (i.e., can be stored until large enough quantities are available for efficient pick-up) and is usually collected by private waste management companies, which have an incentive to make their collection systems cost effective.

Processing recovered paper usually mean removing contaminants, sometimes separating different grades of paper, and baling the material for transport. A study of private paper processing facilities in Massachusetts calculated that 1 job is created for every 4 tons of paper processed daily. These tend to be entry-level blue collar jobs in sorting positions, forklift and front-end-loader operations, and equipment maintenance. Sorting mixed residential paper would create slightly more jobs than processing office paper, five jobs per daily ton of capacity.

These estimates do not measure the jobs produced indirectly through a multiplier effect, nor the additional jobs and increased income earned among firms that manufacture deinking equipment, pipe, pumps, valves, balers, conveyors, trucks and other equipment used in paper recycling. It is also important to remember that solid waste management is a non-discretionary part of private and municipal budgets, and savings in disposal costs go right to the bottom line. In times of recession, a large corporation can sell its fleet of jets or a city can cut back on social welfare expenditures, but they can't stop taking out the trash.

As noted in the previous section, the Executive Order will not compel mills to make uneconomic investments or shut down meaningful quantities of integrated pulping capacity in a way that would result in major jobs losses. Overall, on a net basis, recycling creates more jobs than other forms of solid waste management or commodity production. Recycling a given quantity of material creates 2.5 times more jobs than landfilling, and 20 times more employment than combustion in a municipal solid waste incinerator.²⁸ In addition, many of the employment benefits of recycling accrue in urban areas, where there is a severe shortage of entry-level manufacturing jobs. According to one estimate, for every job created by producing paper from trees, five jobs are created in producing the equivalent amount of paper through recycling.²⁹

V. Costs to the Federal Government

Will the federal government face additional costs if the executive order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content based on the above listed pcm standards?

With the nation's local governments and businesses spending \$11 billion per year to dispose of paper waste, we feel that the first question that should be asked is: What are the additional economic and environmental costs to society of *not* recycling? When the full range of benefits of paper recycling is weighed, it becomes clear that shifting federal purchasing to recycled-content paper is a sound investment.

In the absence of federal leadership, states, local governments and private sector buyers have taken the initiative to stimulate recycled paper markets through affirmative procurement programs. All fifty states, over 400 local governments and more than 600 private companies have adopted "buy recycled" programs. The vast majority of these programs target paper products with postconsumer content. In addition, some federal agencies, such as the Joint Committee on Printing (JCP), have begun to purchase recycled printing and writing paper with at least 15 percent postconsumer content.

States and local governments have made substantial progress in cost-effectively purchasing recycled printing and writing paper. Notable experiences include:

New York State: Since 1981, New York State has purchased paper with various levels of recycled content. Between 1981 and 1991, the state spent \$65 million on recycled-content paper, accounting for 40% of the value of its purchases. In 1991, New York awarded 41 contracts for recycled-content paper, of which only 7 required a price premium, in addition to 22 printing contracts that used recycled-content paper. The overall premium paid across the 41 contracts was 0.58% (i.e., less than 1%). Results were similar for 1992.³⁰

Oregon: In the last two years, the state has spent a total of \$5.9 million on recycled printing and writing papers with either 50 percent total recycled content including 10 percent postconsumer, or 25 percent postconsumer content only. The state offers a 12 percent price preference, however, most bids have been awarded at a premium of between 5 and 9 percent, with some being cost competitive.³¹

Maryland: Maryland spent \$5.3 million on recycled printing and writing paper in fiscal year 1993. The state requires 50 percent total recycled content including 10 percent postconsumer content and reports that recycled paper bids are cost competitive with virgin paper.³²

The Council of Great Lakes Governors: In 1992, seven states (IN, MI, MN, OH, PA, SD, WI) purchased an estimated 28 million pounds of recycled copy paper with 50 percent total recycled content, including either 10 or 20 percent postconsumer content. Roughly one-quarter of the purchase included 20 percent postconsumer content. The states paid a price premium of about 7 percent, overall.³³

The Western States Contracting Alliance: The Alliance, which includes 17 western states and several tribal councils, is preparing a cooperative bid for 66 million pounds of photocopy paper with 50 percent total recycled content including either 10 or 30 percent postconsumer content. Officials expect no problems filling the bid at these recycled content levels.³⁴

New York City: New York City has contracted for more than \$15 million on recycled printing and writing paper purchases and printing contracts with at least 50 percent total recycled content, including 10 percent postconsumer, over the past three years. Several printing and writing paper products contained higher levels of postconsumer content, such as 100 percent postconsumer content computer paper. The city offers a price preference to recycled paper bidders, but has only used it on rare occasions. The total price premium the city paid for recycled printing and writing paper during this period is less than one percent.³⁵

San Jose, CA: In fiscal year 1992, the city spent nearly \$75,000 on recycled printing and writing paper with at least 50 percent total recycled content including 10 percent postconsumer. The city offers no price preference and bids exclusively recycled paper.³⁶

Some federal agencies have also begun to purchase recycled printing and writing papers with 10 to 15 percent postconsumer content. Earlier this month, the JCP opened a bid for 5 million pounds of recycled printing and writing paper, the majority of which was recycled offset with 50 percent wastepaper, including 15 percent postconsumer content. All but one company bidding on the offset contracts offered 15 percent postconsumer content. JCP has been buying exclusively recycled offset (including 50 percent wastepaper content) for several years and experienced only a 2 to 3 percent price premium with the addition of the 15 percent postconsumer content.³⁷

Over the past two years, JCP has increased the levels of postconsumer content in its printing and writing paper specifications from 0 to 10 to 15 percent. The same paper manufacturers, and often the same mills, bid on virgin paper, 50 percent wastepaper, 50 percent wastepaper including 10 percent postconsumer (50/10), and 50 percent wastepaper including 15 percent postconsumer (50/15). For example, in 1993 Eastern Fine Paper Company, of Brewer, Maine, bid on JCP contracts for 50 percent wastepaper content offset paper (4/93), 50/10 (4/93, 7/93, 10/93), and 50/15 (7/93, 10/93). Similarly, Georgia Pacific bid on both the virgin and 50/10 copy paper contracts earlier this month. *In short, manufacturers will produce what government contracts specify.*³⁸

In the private sector, 72 companies, including Bank of America, Chevron, Pacific Gas & Electric and others in the San Francisco Bay formed the Recycled Paper Coalition in 1991. Members of the Recycled Paper Coalition commit to purchasing recycled paper with at least 10 percent postconsumer content. Many member companies are exceeding that requirement already, and the coalition will likely increase its standard soon. Some specific purchasing experiences include:

Bank of America: In 1992, Bank of America's California offices purchased 15 million pounds of copy paper with at least 10 percent postconsumer content at a comparable price to virgin paper. In 1993, the bank purchased roughly the same quantity of paper with 25 percent postconsumer content. This year they will pay a 3 percent premium over virgin paper bids.³⁹

Bell Atlantic Company: This company recently signed a three year, \$3 million contract for computer paper with 50 percent recycled content including 20 percent postconsumer. Bell Atlantic pays no price premium for recycled products.⁴⁰

Coca-Cola Company: Coke uses recycled stationery that includes 60 percent total recycled content including 15 percent postconsumer; post-it notes, file folders, and computer paper with 50 percent total recycled, including 10 percent postconsumer; and the Coca-Cola 1992 annual report was printed on 100 percent postconsumer content paper. Overall, the company has saved from 3 to 12 percent in purchases of recycled products.⁴¹

Large manufacturers of virgin paper that are entering the recycled paper business state that although they would like to receive a premium upon entering the market, they are not counting on this phenomenon to last. Factors that would tend to reduce costs include greater competition, the elimination of the 50 percent total recycled content requirement, and more cost-effective drying equipment for deinked market pulp.

Conclusion

A valuable lesson can be learned from the recent experience of state governments in negotiating voluntary recycled content standards with newspaper publishers. In 1989, there were nine newsprint mills in North America that used old newspapers as a raw material (out of a total of roughly 65). Between 1989 and 1992, newsprint producers added a total of 12 new machines, only one of which was integrated to a newsprint deinking mill. This exceptional round of construction created a massive glut of finished newsprint, severely depressing prices.

In November of 1989, the price for recovered newspapers also crashed, as a result of rapidly increased collections stemming from an very sharp increase in landfilling costs in the Northeast. Prodded by their readers, newspaper publishers asked suppliers for recycled newsprint (at no price premium), and were met with familiar stories of inferior quality and the poor performance of recycled newsprint on high-speed printing presses. Legislatures in Connecticut, California and Florida soon passed laws "requiring" publishers to raise the levels of recycled content in newsprint (these laws were very mild, lacking enforcement provisions and providing for exemptions in cases of increased costs).

Facing legislation in other states, groups of newspaper publishers then negotiated voluntary agreements to increase the level of recycled content with officials in states like Massachusetts and New York.⁴² Rather than taking a lowest common denominator approach, these agreements called for 40% recycled content levels by 1995. As with the potential response of printing and writing paper manufacturers to the Executive Order, the

agreements did not anticipate that all producers would make recycled newsprint at the 40% level, but that this would be an average across different large publishers in the same state.

Despite the terrible, self-induced financial condition of the newsprint industry, with the widespread adoption of new flotation deinking technology, the newsprint mills found that they could make a high-quality sheet, and in many cases under generate favorable economic returns. Now over a dozen newsprint deinking plants are in operation or under construction, and the newsprint industry is well on its way to resolving the "glut" of old newspapers.⁴³ While newsprint and printing and writing paper are clearly distinct and different products, federal officials should take note of the ambitious and reasonable targets set by their state counterparts.

ENDNOTES

1. Debra Garcia, of Paper Recycler [an industry newsletter], personal communication, September 21, 1993.
2. James Rossi of Stone & Webster Engineering, Boston, MA, which intends to build a 200 tpd output plant in Auburn ME. Personal communication, September 23, 1993.
3. Franklin Associates Ltd. 1991. Evaluation of Proposed New Recycled Paper Standards and Definitions, October 8, 1991, Figure 1, p. 8.
4. Neil Clarke, Ponderosa Fibres of America, Inc. Phone Interview, September 24, 1993.
5. "The Conservatree Information Services/ National Association of State Purchasing Officials Recycled Paper Survey," Conservatree Information Services, September/October 1992. The states are: Alabama, Arizona, California, Colorado, Connecticut, Delaware, Florida, Illinois, Indiana, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New Jersey, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Wisconsin, and Wyoming. Memorandum from Richard Keller, Northeast Maryland Waste Disposal Authority, August 27, 1992.
6. Telephone interview with Susan Kinsella, Director, Californians Against Waste Foundation's Buy Recycled Campaign, September 21, 1993.
7. Memorandum from Richard Keller, Northeast Maryland Waste Disposal Authority, September 21, 1993.
8. According to research done by Franklin Associates for the RAC, under the "processed recovered fiber" proposal, by 1995, about 47% of converting scrap would include contaminants that allow it to be counted under the category of "processed recycled fiber." Because converting scrap is a small proportion of total paper production, this means that in 1995, 94.9% of total paper production could fall inside the "processed recycled fiber" definition. Franklin Associates Ltd. Evaluation of Proposed New Recycled Paper Standards and Definitions, Table A-4, Appendix, p. 6.
9. See AFPA bar chart and calculations in EDF analysis submitted to OEP, OMC, and NEC on September 15, 1993.
10. (1) Virtually all recycled paper manufacturers already certify or label the post-consumer content of their products. (2) The paper industry is an international leader in developing sophisticated process control systems, statistical sampling and monitoring routines, and inventory management systems. It is hard to believe that such expertise cannot be applied to tracking the grades and sources of recovered paper. (3) The origin of most recovered paper - perhaps 90-95% based on industry testimony -- can be told by visual inspection or its given grade under industry paperstock standards. For a mill to certify a certain minimum post-consumer recycled content, it does not have to know the source of every ounce of paper used in the mill, but must use enough post-consumer recovered paper to stay above a threshold, incorporating reasonable tolerances for variation in fiber supply. To our knowledge, a detailed cost-per-ton figure for the additional monitoring costs at a printing and writing paper mill

required to meet a post-consumer certification requirement (above that already required for inventory and quality control) has yet to be provided. (4) Cheating by brokers and mills can occur under any system (as is now reportedly happening under a 50% wastepaper requirement). Under any definitional system, there will always be a slightly fuzzy boundary between what meets the definitions and what doesn't (for example, between a bale of fiber containing some paper with ink coverage or "contaminants" and some paper without). To prevent cheating under any system, paper purchasers must set high standards for monitoring and certification and incorporate them into suppliers' quality review procedures. Additional enforcement actions by government consumer-protection agencies may also be effective in deterring egregious violations.

11. Paper, Paperboard, Pulp Capacity and Fiber Consumption 1991 - 1995 33rd Annual Survey, New York: American Paper Institute, 1992, p. 8.

12. 1992 North American Pulp and Paper Factbook, San Francisco: Miller Freeman Inc., 1991, p. 186.

13. J. Chrysikopoulos and T. Doster, Forest Products-Paper Company Handbook, Goldman Sachs Investment Research, January 6, 1993, p. 17.

14. Paper, Paperboard, Pulp Capacity and Fiber Consumption 1991 - 1995 33rd Annual Survey, New York: American Paper Institute, 1992, pp. 8 - 9.

15. 1992 North American Pulp and Paper Factbook, San Francisco: Miller Freeman Inc., 1991, p. 186.

16. J. Chrysikopoulos, Uncoated Free Sheet Paper Markets, Goldman Sachs Investment Research, June 16, 1993, p. 2.

17. M. X. Diverio, P. W. Soldati, Outlook for Uncoated White Papers, UBS Securities Equity Research August 9, 1993, p. 20.

18. J. Chrysikopoulos, "Uncoated Free Sheet Paper Markets", Goldman Sachs Investment Research, June 16, 1993.

19. Recent costs per daily ton of capacity for new deinked pulp mills that use office waste paper range from \$275,000 to \$333,000 for Great Lakes Pulp & Fibre Inc.'s deinked market pulp mill in Menominee, MI (*Pulp and Paper Week*, Nov. 2, 1992) and Union Camp's facility in Franklin, VA (*Paper Recycler*, March 1993). Typical costs per daily ton of capacity for new bleached kraft mills range from \$550,000 based on acquisitions after 1988 to \$750,000 for Aracruz Cellulose's new state of the art mill in Brazil (T. Clephane, "Forest Products & Paper", Morgan Stanley U. S. Investment Research, Dec. 31, 1992 and J. Chrysikopoulos, "The Market Pulp Business from an Investor's Point of View." Goldman Sachs Investment Research, Aug. 24, 1993).

20. A. C. Ververka, "Economics Favor Increased Use of Recycled Fiber in Most Furnishes", *Pulp and Paper*, September 1990, pp. 100 - 101.

21. Allen Miller, American Power Co., telephone interview, Sept. 20, 1993; and Pulp and Paper Week, November 2, 1992, p. 6.

22. "Recycling -- And Beyond", Weyerhaeuser Paper Company Publication, p. 10.
23. "IP builds 360,000-tpy uncoated free-sheet machine at Selma, Ala., after labor agreement", *Pulp and Paper Week*, Aug. 9, 1993, p. 1.
24. A 1990 national NBC/Wall Street Journal poll found that 38% of surveyed consumers said they had regularly changed the types of products they buy and use because of environmental concerns. An additional 38% said they did so occasionally. See Hart, P. and Teeter, R., April National Poll, conducted for NBC News and the Wall Street Journal between April 11-16, released April 20, 1990. A 1990 Penn and Schoen national survey found that 74% of Americans said they are more likely to purchase a product in biodegradable or recyclable packaging. See Williams, Simon, "The Green Revolution in Products and Packaging," reprinted from VM + DT Magazine, January 1990, citing a telephone survey conducted by the polling firm of Penn and Schoen, Inc. Furthermore, many consumers are even prepared to pay a premium for a product that they perceive as being better for the environment. An Abt Associates study of American consumers conducted in November of 1990 found that 90% of those interviewed said they would pay more for environmentally sound products. See Abt Associates Inc., "Consumer Purchasing Behavior and the Environment" (Cambridge, MA, November 1990).
25. The Marketer, April 1990 pp. 36-7; Boston Globe, March 2, 1990 pp. 55, 59.
26. This is based on the assumption that at least 1,170,000 tons of deinking capacity will be installed and operating by the end of 1995 -- these are projects that are in place now, under construction, or nearly certain to go forward. Assuming that deinked market pulp producers have contracts for their fiber and that integrated manufacturers know that they will be able to sell all of their product (both assumptions are required to obtain financing for mill investments), at 25% average recycled content (a high number, set by fiber weight) this leads to 5.5 million tons of production, which will presumably go to customers who know that the paper has recycled content and have asked for it.
27. Andrew Reamer, "The Economic Development Benefits of Recycling," Economic Development Commentary.
28. John Ruston and Shelley Dresser. 1988, "Policy Options for Developing Secondary Materials Markets," Journal of Resource Management and Technology, July 1988, p. 61.
29. Robert Letcher and Mary Sheil. 1986. "Source Separation and Citizen Recycling," in Wm. Robinson, ed., The Solid Waste Handbook: A Practical Guide. New York: John Wiley and Sons, p. 221.
30. State of New York, Executive Department -- Office of General Services. Internal memoranda, Dec. 30, 1991 and 1992.
31. Telephone interview with Terry Larrance, State of Oregon Purchasing, 9/22/93.
32. Telephone interview with Richard Keller, NE MD Waste Disposal Authority, 9/21/93.

33. Telephone interview with Dan Wehrman, Wisconsin State Bureau of Procurement, 9/21/93, and Memorandum to Interested Parties, 9/21/93.
34. Telephone interview with Connie Stacy, Washington State Department of General Administration, 7/28/93.
35. Purchase of Products With Recycled Content, Fiscal Year 1992. NYC Department of General Services, November 1992.
36. Recycled Products Procurement Annual Report, City of San Jose, October 1991.
37. Telephone interview with Sara Jones, Joint Committee on Printing, 9/20/93.
38. "Paper Mills Supplying Bidders on Government Recycled Copier Paper Contracts," and "Paper Mills Supplying Bidders on Government Recycled Offset Printing Paper Contracts," Government Printing Office.
39. Telephone interview with Candice Scarlatos, Bank of America, 9/20/93.
40. Telephone interview with Maureen Burke, Bell Atlantic Company, 9/22/93.
41. "Buy Recycled Business Alliance: Profiles In Buying Recycled," National Recycling Coalition's Buy Recycled Business Alliance.
42. Indeed, eleven states have passed mandatory minimum postconsumer content standards for newsprint and eleven states have voluntary agreements to that effect.
43. Michael Alexander, "Newsprint Partnership Key to Recycling," Pulp & Paper, September, 1993, p. 182.

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM
JAMES RIVER PAPER CORPORATION**

September 24, 1993

**JAMES RIVER CORPORATION**

300 Lakeside Drive, Oakland, CA 94612-3592

September 23, 1993

Mr. Ken Connolly
Office on Environmental Policy
The White House
Washington, DC

Dear Mr. Connolly:

On behalf of James River Corporation, I'm pleased to respond to the White House's September 21 questionnaire about recycled standards for printing and writing papers. James River has invested more than \$300 million in recycling facilities during the last four years. Our plants such as the office-paper recycling facility at Halsey, Oregon, and our 100 percent recycled paperboard mill at Kalamazoo, Michigan, represent the state-of-the-art in North America.

While we have extensive data on the use of recovered fiber in our own operations, we have not previously considered the questions you have posed. With short notice, we'll do our best to provide meaningful information and apologize that it's difficult to be brief on this subject. Your focus on economic and market issues is appropriate, since in our experience there are few technical barriers remaining to the use of recycled fiber.

Definition

What definition of recycled content should the Federal government use in order to ensure the maximum utilization of postconsumer material (pcm)? How does this relate to current practices at the federal, state, and local level, and in private paper purchasing initiatives?

James River supports the initiative of the American Forest and Paper Association Printing-Writing Division, which offers two options for minimum recycled content thresholds as a way to maximize utilization of postconsumer material (pcm). These thresholds are either 50 percent total recovered fiber -- essentially the existing EPA standard, or at least 10 percent postconsumer and/or processed recovered fiber by fiber weight. Processed recovered fiber is defined as that fiber from recovered paper that needs to be treated to minimize the effect of materials such as inks, dyes, toners and water insoluble glues and coatings.

Terminology

We understand the political dilemma this definition represents, because it expands the category of postconsumer material and encourages acceptance of what at first appears to be a small amount of that pcm. Yet, the opportunity exists for the President to lead the country to increased understanding and reason on this subject. James River has consistently preferred a broad definition of postconsumer waste. When EPA asked for comments on this same issue in December 1990, we explained why the term "deinked" was far more appropriate to describe the materials that need to be reprocessed before they could be reused in higher value recycled-content papers such as printing and writing. The term "processed recovered fiber" is more technically correct than "deinked" because, as we've found, it is not only ink on recovered paper that must be removed; it's also UV coatings, glues used in binding, laser toners, poly- and foil contaminants, and a host of other materials that have been a tremendous barrier to recycling, particularly in printing and writing papers.

As James River explained at the EPA Forum in March of this year, the investment in a physical plant capable of removing these materials is the same regardless of where they came from in the waste stream. The printed waste or rejects from printers in Portland, Oregon, and the unsold magazines of Corvallis require the same processing in our deink plant in nearby Halsey as do the recovered office papers we bring from San Antonio, Texas, to the plant. However, the narrow definition of postconsumer waste forces us to pass up what otherwise would be appropriate fiber for recovery and waste fuel transporting paper from offices throughout a 15-state region. Needless to say, this contributes to the higher cost of recycled-content paper. We have found many challenging preconsumer papers right in our backyard, but the emphasis on postconsumer causes us to minimize their use. Instead, they go to landfill or are exported for use in low-grade paper products. Among these very hard to recycle papers is lottery ticket stock, which has multiple coatings and laminates for security reasons. Another is material from the booming computer manual industry, where off-quality product and trim at the binderies presents a real challenge to recycling because of the glues used. A deinking facility of Halsey's caliber is required to recapture the excellent fiber. Other challenges are presented by papers that to the untrained eye have no visible extraneous materials. Among them are the papers used in inkjet printers, a growing market segment. The coatings used to prepare the surface make repulping very difficult without prior treatment.

As new deink plants start up in the near future, the race to collect postconsumer materials will become intense. In truth, in the year and a half since startup of Halsey, James River has had the West pretty much to itself and yet has never found an excess of the sorted office papers that it requires. However, when a new office paper recycling plant came on line in Northern Minnesota this summer, they forged West as far as Montana for their recovered office papers. At the same time, a 100,000 ton a year expansion in Oklahoma has brought new paper buyers to the Los Angeles market to vie for fiber. Other projects have been announced in the Northwest and Arizona which will threaten our ability to provide the 450 tons a day required by our plant. While James River

foresees the day that it would need additional deinking capacity to feed its paper mills in the Northwest, availability of recovered fiber that meets government or market requirements will need to be far more assured than it is today. All mills will need the flexibility to source raw materials as supply becomes tight, quality is degraded and costs escalate. Broadening the postconsumer definition is one way to resolve this barrier. Another is for the government to do all its can to encourage source-separated collection.

Percentages

While James River is very pleased by the attention its Eureka™ recycled copy, forms and printing papers have received since their introduction 16 months ago, to assume that this product should be the national standard would be a serious mistake. And while we would be proud to be sole-source supplier to the Federal government, we don't believe that's the intent of the Executive Order. Nor would it please our existing loyal customers. Our standard product contains 50 percent deinked fiber, with 30 percent postconsumer waste. There is no question about quality; it is clean, bright and functions very well. For these reasons, it has gained rapid acceptance in the marketplace, even at prices higher than virgin counterparts. But policymakers should not be saying, "Well, if it's already being done then why not make it the standard?" Instead, they should be asking what can be done to encourage other mills to begin using recovered material.

James River's situation in the Northwest was ideal (and probably unique in the industry) for investing in deinking technology. It has a tissue mill in Halsey that did not have its own source of virgin fiber and within a 100-mile radius it has two very large mills that make both tissue and communication papers. The 110,000 tons a year of deinked fiber can be distributed among the three mills in a reasonably economical way. But James River has also introduced recycled papers at its other printing and writing paper mills. Their situations offer different insights into the economics of recycled papers.

At St. Francisville, La., James River makes coated publishing papers. This is an integrated mill, whose pulp mill supplies virtually all the fiber needed by the paper machines there. About two years ago, the mill began making recycled coated groundwood, which from a quality perspective was very well received by printers and publishers. It contained 30 percent postconsumer fiber and a total of 50 percent deinked fiber. This was not the under-40-pound lightweight coated required by many magazine publishers, but a slightly heavier weight suitable for magazine covers and catalogs. The high postconsumer content may come as a surprise, but when buying deinked fiber to meet a legal or de facto standard of 50 percent total recycled content the majority will be postconsumer material. (Generally, deinked pulp is available in either 60% PCW or 90% PCW.)

But here's where the adverse economics of higher content requirements come into play. Making paper with 50 percent recycled content required curtailing the pulp mill by one-third, costing about \$55,000 a day. We lost the benefit of energy generated from the residuals of the pulping process. The fiber requires

additional processing to achieve runnability and more chemicals to achieve the optical properties required for color printing and readability. Additionally, it forced reduced content of very economical mechanical groundwood fiber, which has a yield of about 90 percent. The paper machines ran 10 percent slower to protect quality using recycled fiber. Incremental fiber costs ran from \$70 to \$110 per ton of paper. Altogether it cost about \$240 extra per ton of paper to make this grade compared to its virgin counterpart. These costs were nearly impossible to recover in a printing and publishing market that has tracked the economy into the depths of recession and has been very slow to recover. Furthermore, because of the adverse costs, we have had to limit our production of the recycled paper to only 400 tons a month, using only 1,700 tons a year of recycled fiber. Recycled coated paper has remained a specialty grade.

But the market has spoken. Beginning October first, we will make a recycled-content coated paper with 10 percent postconsumer fiber. This can be done without curtailing pulp mill production. We will achieve optical requirements with less titanium dioxide. We will improve productivity on the recycled-content papers. The cost differential drops to about \$20 per ton at today's cost of fiber. We will be able to make and sell many more tons at the lower recycled fiber content. In fact, we believe 50 percent of all paper run on the two machines can be recycled content as the new product gains market acceptance. That will result in our using five times as much postconsumer fiber, about 9,000 tons a year.

Less is more! By creating a 10 percent standard, the White House could expect to see this fivefold increase in postconsumer and/or processed recovered fiber realized in very short order. While a 10 percent standard might not motivate every commodity paper mill in the country to build a deink plant, the suppliers of market deinked pulp will need to expand their capacities rapidly. This may already be under way. Our estimates are that current deinking capacity is at 600,000 tons, with 1 million incremental tons on the drawing board.

Another James River mill found a similar situation in the groundwood - containing forms market. The 50/10 sheet did not gain market acceptance because of its higher price. Yet our grade has been successful since we dropped the total 50 percent recycled content and reintroduced it with a 20 percent deinked fiber content. Here is another situation where market dynamics have determined the recycled-content level that makes sense to both customers and supplier.

There is one more situation to which we can bring our experience and that is the very small, nonintegrated paper mill. These are the mills where recycled papers originated and which rapidly brought to market grades meeting EPA requirements when the guidelines were issued in 1988. They have had to purchase pulp all along, because they do not have their own pulping facilities. The shift to recycled fiber was very easy. For the most part, they make text and cover grades which have always commanded a premium because they are high value-added products. Because of the nature of the product, they are

made on some of the smallest and slowest-running machines in the industry. Total capacity of our mill at Ypsilanti, Michigan, for example, is only about one-fifth that of the machine at Camas, Washington, that makes copy paper. This market works on its own, essentially ignoring the conditions that affect copy paper, formsbond, and web printing papers. Therefore, market competition quickly forced introduction of a minimum of 10 percent postconsumer into these grades despite the lack of a legal requirement to do so. And the competition continues. As we upgrade our 50/10 Graphikal® text and cover line it becomes 50/25. No government intervention should be attempted in this market, especially considering it accounts for only 500,000 tons per year -- a very small segment of the total 26-million-ton printing and writing papers market.

Capacity

What capacity constraints, if any, might arise assuming the executive order mandated all agencies to produce recycled printing and writing paper containing the following levels of pcm?

Capacity constraints may arise at three points: recovered paper collection, deinking capacity to provide adequate pulp, and finally paper manufacturing and converting capacity itself. The American Forest and Paper Association is far better prepared to answer this question with statistics for the industry as a whole. Rather, I can provide anecdotal comments and opinion based on James River experience.

Collection Constraints

The deinking facility at Halsey, Oregon, requires 450 tons of recovered paper every day. This is the equivalent of all the office papers used daily in the states of Oregon and Washington, or by the state of California alone. Currently, we obtain about 45 percent of the paper we need from the Pacific Northwest, another 30 percent from California, and the rest from throughout the West. Collection systems must increase dramatically to serve the needs of new deinking capacity. Source separation is imperative and that which cannot be economically recycled should be a source of fuel for "waste to energy," a clean, renewable and cost-effective alternative to fossil fuel. It should also be pointed out that all of the recovered papers appropriate for use in printing and writing papers are also in demand for other grades. Recovered office papers are the primary fiber for tissue grades and a major source for paperboard and other products, so analysis should not be confined to what will be required for a single segment. The competition will be fierce. The value of recovered office papers to other industry segments also explains why it is so essential to continue to encourage use of virgin fiber in printing and writing papers; it is the source of strength in all the other recycled paper products.

Deinking Constraints

Current constraints are probably best reflected in the disproportionately high cost of deinked market pulp, selling for as much as 70 percent more than the price of virgin fiber. And as the price of deinked postconsumer fiber climbs, the price of pulp substitutes has dropped precipitously even though these clean trimmings are ideal for printing and writing papers.

In its Northwest mill system, James River does not yet feel constrained by its deinking capacity. And yet, even with an internal source, the cost of deinked fiber is a constraint for the same reasons explained earlier regarding St. Francisville. Rather than use the high quality deinked pulp, some of our toweling machines have turned instead to direct entry of less costly old newsprint – some 30 tons a day at Camas. Up to 100 tons a day of direct entry is expected in the future. Therefore, we are far more constrained by what to do with the virgin fiber made at this integrated mill that is now being displaced by more than 100 tons a day of our deinked fiber and other recovered fiber. Investments in additional deinking capacity will not be possible anywhere in James River's system if existing plants are forced into negative cashflow situations or closure with accompanying writedowns and loss of jobs.

Papermaking Constraints

With about 55,000 tons a year of deinked fiber for use in printing and writing papers (the other 55,000 tons goes to tissue and towel products), we enjoy flexibility in determining what kinds of papers to make and the recycled-content levels of each product. For the most part, we have chosen to use 50 percent total recycled content, all of which is deinked Halsey fiber. Given our mix of recovered papers, our postconsumer content is a minimum of 30 percent. The 50 percent content-level means that we can produce about 80,000 tons a year of recycled copy paper, formsbond, envelope, offset and opaque printing papers. This represents only about a third of our printing-writing papers capacity at our two Northwest mills.

Scenarios

Regardless of the scenario, James River's Wauna and Camas mills are well positioned with adequate deinking and papermaking capacity, indicating in terms of policy that what is currently possible in this single situation should not dictate the standard. We could put 10 percent deinked fiber into every ton of printing and writing papers we make at these locations, or 20 percent into half of what we make. But that situation does not exist at other James River communication papers mills nor at most integrated mills across the industry. While it would be nice to be rewarded for investments already made, we would rather see policy created that encourages additional progress in recycling.

Jobs

What dislocation, if any, could be expected in the pulp and paper production industry if the executive order set the above listed pcm standards for federal purchases of recycled printing and writing paper? What level of job creation would this lead to in this and other industries?

Given the current state of our industry, I would suggest that every added government regulation and intervention increases the likelihood of marginal facilities losing their battles for survival. Unfortunately, there are far too many of those facilities and even whole companies that have struggled through recession and the cost of government mandates, from timber-harvest limits to air

and quality investments. A significant shift in a mill's ability to make products using existing technology and processes on assets valued at hundreds of millions of dollars will force the loss of many, many jobs. That's why an incremental approach is so important, setting a minimum 10 percent threshold to encourage the first steps into recycled fiber utilization. Any scenario which forces an increase by 1999 to 25 percent recycled-content in all printing and writing papers would greatly jeopardize jobs as well. Forcing the reduction of virgin pulping capacity by one-fourth fails to recognize the lifespan of these capital-intensive investments and the unfortunately low level of profits accruing to them for the last several years. Sixteen hundred jobs may be at stake at a typical integrated mill, and the margin that determines survivability is very slim. Some permanent closures have already been announced on the West Coast, and weak market conditions are resulting in new curtailment being announced at printing and writing papers mills this week.

Costs to the Federal Government

Will the Federal government face additional costs if the executive order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content based on the above listed pcm standards?

Most definitely. While James River introduced Eureka!™ copy paper at a price described as "in the same ballpark" as virgin fiber copy paper, the cost differential in manufacturing (as well as the record low prices for virgin papers) soon forced us to increase the differential. The upcharge range of 5 to 10 percent typically referred to today seems about right. As demand for recycled-content grows and competition for deinking grades of recovered paper increases, that spread may also increase as paper companies try to maintain already thin margins. The cost for the federal government to purchase 300,000 tons of printing and writing papers a year could be expected to be around 10 percent higher to purchase recycled grades. Using a generalized price of \$800 per ton, that \$80 per ton increase would result in increased costs to the government of about \$24 million a year.

It's virtually impossible to predict what effect the various levels over time would have on the price of paper. The marketplace will dictate. But suffice it to say, industry must charge more for recycled-content papers, and contrary to conventional wisdom, we do not see that price coming down as demand is created.

Incentives

Will the above listed pcm standards for recycled printing and writing paper create the right incentives to ensure that mills of differing sizes begin to use pcm in the production of paper? Is there a better alternative?

We believe that a 10 percent postconsumer, deinked or processed recovered fiber content is the appropriate starting point to create an incentive for investment. Rather than set future thresholds, reevaluation after three years

would be most appropriate. In our own experience, it has taken three years from concept to completion of new recycling capacity, not just at Halsey, but at our Green Bay, Wisconsin, and Kalamazoo, Michigan, recycling facilities as well. In three years, the government will be able to assess the capacity and availability of recycled-content papers meeting the minimum standard as well as the steps industry has taken to make the significant investments required. Rather than feet dragging, our guess is that the competition of the marketplace will have pushed the recycled fiber content well above the minimums. It will be a way that companies can differentiate themselves, just as James River has in the West with its Eureka! brand.

At the same time, I would like to see the President address the reluctance of government agencies to embark on the use of recycled papers to date. It would appear that there are barriers far more significant than availability or industry's investment in recycling. The private sector has shown no such reluctance to purchase recycled printing and writing papers. Through a combination of bottoms-up interest and top-down leadership, corporations have made significant commitments to give recycled-content a try. And they have been rewarded with quality products and public acclaim. From my own experience as an editor in the Air Force Reserve, I have not found the psychological and bureaucratic barriers being removed in the same fashion. This may, in fact, be much more of a reinventing the government issue than an environmental one. It's on breaking down those barriers that I think government should put its attention, after instituting a 10 percent minimum content level which would eradicate the admitted shortcoming in the existing EPA guideline for printing and writing papers and create the incentive to expand the use of recovered materials.

I thank you on behalf of James River Corporation for allowing us to participate in this dialogue. It is one of great importance to our company, our industry and our country. We are privileged to be able to share our recycling experience with the Administration and reaffirm our commitment to do our part to improve the environment.

Look forward to seeing you on Monday.

Respectfully,



Katie Cutler
Director, External Affairs
Communication Papers

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM
NATURAL RESOURCES DEFENSE COUNCIL**

September 24, 1993



*Natural Resources
Defense Council*

40 West 20th Street
New York, New York 10011
212 727-2700
Fax 212 727-1773

**Executive Order:
Federal Acquisition, Recycling and Waste Prevention
Questions Regarding Recycled Paper
September 23, 1993
Response of the Natural Resources Defense Council**

"In conducting workshops in Tennessee and hearings in Washington on recycling, I have found overwhelming public enthusiasm for the process. But I have also found tremendous disappointment among individuals and groups who have dutifully collected and sorted those elements of their municipal waste that they knew could be profitably recycled, only to find that it was impossible to find buyers for the material. Most people who have experienced this problem believe strongly that federal legislation is required to even the odds between recyclable and virgin materials... In order for recycling to work, more than individual enthusiasm is necessary. The system has to change and our mass processes have to be modified...

Take paper, for example. Many of the largest paper consumers and manufacturers have large investments in forests and tree farms, and they are therefore loath to use recycled paper instead of making additional profit by cutting the trees in which they have invested and for which they receive large tax subsidies."

Vice President Al Gore
Earth in the Balance
(emphasis added)

"There are those who profit from the waste in our system, and they will oppose the changes we need to make"

President Bill Clinton
Speech to a Joint Session of Congress
September 22, 1993

"The U.S. rate of paper recycling also lags most of Europe and Japan: of 18 [OECD] countries, the U.S. ranked 15th..."

Congressional Research Service
Report to Congress, 1991

Question # 1. Definition:

What definition of recycled content should the Federal government use in order to ensure the maximum utilization of post-consumer material (pcm)? How does this relate to current practices at the federal, state and local level, and in private paper purchasing initiatives?

NRDC's Response to Question # 1:

Only a post-consumer definition consistent the Solid Waste Disposal Act¹ Subtitle F, Section 6002 (h)(1)(A) [RCRA] can stimulate investments into post-consumer de-inking capacity. This is so because the federal market is not adequate by itself to stimulate a major shift by the larger mills even if a post-consumer definition is used. (Federal paper purchases represent only 300,000 tons out of a 25 million ton market.) Broadening the definition of what constitutes recycled paper can only have a depressing effect on the use of post-consumer paper. Indeed, any change in this definition could be devastating to the paper recycling industry since most states distinguish post-consumer paper from pre-consumer paper consistent with the RCRA definition in the purchasing specifications and one-half of all the states now require post-consumer fiber as defined in RCRA in their recycled paper standards.² Similarly, virtually all private sector definitions of post consumer paper comport with RCRA definitions. For example, members of the Buy Recycled Business Alliance purchase paper with a minimum 15% pcm. These members include Bell Atlantic, McDonalds, Bank America, Lever Brothers, American Airlines, Coca Cola, Kmart, and Quaker Oats.

It is the paper collected via municipal collection programs that is not adequately finding its way to markets. Ninety-eight percent of all the paper discarded in the U.S. last year was post-consumer paper³. Obviously, this is the distorted market problem we need to correct. Post-consumer paper is the paper that cost American taxpayers and consumers \$11 billion to dispose of last year. Post-consumer paper is the waste product instigating battles over environmentally damaging and costly incinerators and landfills. By contrast, the paper industry is not having a problem reintroducing conversion scraps and over-

¹ 42 U.S.C., title II of Public Law 89-272 and the amendments made by subsequent enactments.

² Conservatree Information Services

³ Franklin Associates, Ltd. Evaluation of Proposed New Recycled Paper Standards and Definitions for the Special Task Force on Standards and Definitions Recycled Paper Committee, Recycling Advisory Council, January 27, 1992. At Table A-1. Attached.

issues into their processes: more than 94% of these materials are now recovered. By contrast, more than 70% of all the post-consumer paper waste generated is not even recovered, much less recycled.⁴ Vice President Gore, when he was Senator Gore, recognized this when he introduced S. 1884 in 1990, the "National Recyclable Commodities Act", which required a 50% post-consumer procurement requirement for half of all the paper the federal government purchased, to be met by 1993:

"A critical element in successful recycling is missing, however. Cities and towns that have worked hard to initiate successful recycling programs are now finding they cannot get rid of their recycled products because of one simple reason: There are no markets...

I will give you an example. A church group in Sevierville, TN was recently forced to bring an end to their year-old recycling program. They did a great job for their part. The recycling center that purchased the seven tons of paper they collected each week suddenly refused to pick-up their paper because the mills could no longer handle the quantities being shipped to them, simply because they could not find purchasers for the recycled product that they were producing.⁵

It is likely that most larger mills will shift to post-consumer de-inked fiber only as the demand for post-consumer paper spreads to advertising, publishing and catalogue grades. In the short term, immediately following the executive order, market pulp producers will certainly be the predominant suppliers for manufacturers who sell to the federal market. This is confirmed by S.D. Warren, an operator of large paper manufacturing facilities producing printing and writing paper: "While [federal] purchasing guidelines set a marketplace precedent, they may not necessarily have an immediate market impact on other [non-government] grades."⁶ Consequently, it is only as the

⁴ Franklin Associates, Ltd. Evaluation of Proposed New Recycled Paper Standards and Definitions for the Special Task Force on Standards and Definitions Recycled Paper Committee, Recycling Advisory Council, January 27, 1992. At Table 1, p.8. Attached.

⁵ Senator Albert Gore Jr., National Recyclable Commodities Act of 1989, Hearing on S 1884 before the Subcommittee on the Consumer of the Committee on Commerce, Science and Transportation, U.S. Senate One Hundred First Congress June 13, 1990. At p. 2.

⁶ Letter dated September 14, 1993 to Dr. Allen Hershkowitz, NRDC, from James D. Black, S.D. Warren.

demand for post-consumer paper spreads to advertising, publishing and catalogue grades, that more of the larger mills will begin to invest. Thus, this executive order must be seen as, at best, the first step in developing the post-consumer paper market. And only a requirement to use post-consumer paper can do that.

It is also important to bear in mind that no agreed upon definition of "processed recovered fiber" exists. The ASTM, which has been investigating this issue at the insistence of the paper industry is still undecided as to what this term actually means. Needless to say, any use of this term by the federal government could only confuse markets, consumers and investors.

Questions # 2 and # 5: Capacity:

What capacity constraints, if any, might arise assuming the executive order mandated all agencies to procure recycled printing and writing paper containing the following levels of pcm?

- Scenario A: - a 10% pcm standard immediately
 - a 15% pcm standard by January 1996
 - a 25% pcm standard by January 1999
- Scenario B: - a 15% pcm standard by January 1995
 - a 25% pcm standard by January 1999
- Scenario C: - a 20% pcm standard by January 1995
 - a 30% pcm standard by January 1999

Incentives

Will the above listed pcm standards for recycled printing and writing paper create the right incentives to ensure that mills of differing sizes begin to use pcm in the production of paper? Is there a better alternative? (Please complete for each of the above scenarios.)

NRDC's Response to Questions # 2 and # 5:

Published data on recycled fiber capacity indicates that greater financial strains on existing capacity are certain to result from a low federal procurement standard of 15% than a more meaningful 20%-30% standard. More than enough pulp is available to meet a 20%-30% post-consumer standard. (See enclosed table listing recycled pulp marketers.) According to the S.D. Warren Company, a printing and writing paper company operating some of the largest paper-making machines:

Basically we see the recycled fiber industry in a somewhat over-capacity position at this time. That is, we can buy all the recycled fiber pulp we need.⁷

A low federal procurement standard of 15%, will not change this situation. To quote again from S.D. Warren: "While [federal] purchasing guidelines set a marketplace precedent, they may not necessarily have an immediate market impact on other [non-government] grades."⁸ Thus, unless a meaningful procurement standard is enacted, and unless this standard is effective within 18 months or so, the current over-capacity of recycled fiber threatens the viability of hundreds of millions of dollars of investments, on the manufacturing side, and billions of dollars of investments, on the municipal solid waste collection side. The data are clear on this issue: The federal government purchases only 300,000 tons of P & W paper annually, out of a total printing and writing grade market of 25 million tons per year. To achieve a 20% post consumer standard, 60,000 tons per year of P & W grade market pulp must be available. In fact, 523,250 tons are currently on the market for printing and writing grades, almost ten times more than is needed to meet a 20% PC content standard. Investments to produce an additional 1.1 million tons per year are planned for northeastern U.S. (See table attachment)

The market will respond efficiently to a 20% post-consumer standard: The federal market is not adequate by itself to stimulate a major shift by the larger mills. (It represents only 300,000 tons out of a 25 million ton market.) As S.D. Warren and others have indicated, this shift will occur only if the demand for post-consumer paper spreads to advertising, publishing and catalogue grades. In the short term, immediately following the executive order, market pulp producers will supply manufacturers who sell to the federal market. As the demand for post-consumer paper spreads to advertising, publishing and catalogue grades, more larger mills will begin to invest. Thus, this executive order can be seen as at best the first step in developing the post-consumer paper market. A 20% post consumer standard will have no adverse effect on large mills, even as it preserves the viability of existing investments into de-inking capacity.

⁷ Letter dated September 14, 1993 to Dr. Allen Hershkowitz, NRDC, from James D. Black, S.D. Warren.

⁸ See note above.

Question # 3. Jobs:

What dislocation, if any, could be expected in the pulp and paper production industry if the executive order set the above listed pcm standards for federal purchases of recycled printing and writing paper? What level of job creation would this lead to in this and other industries? (Please complete for each of the above scenarios.)

NRDC's Response to Question # 3:

Increasing the amount of post-consumer paper blended into paper machines manufacturing printing and writing paper will have no adverse affect on employment at paper manufacturing facilities. Quite the contrary, a federal requirement stimulating production on post-consumer recycled paper will affect jobs positively in a number of market sectors. Recent experience with the evolution of the de-inking industry indicates that thousands of jobs will actually be produced. Investment bankers confirm this: "While the pulp and paper economy as a whole has been stagnant, the one bright spot for investors is in deinking and recycling facilities."⁹ Empirical evidence is clear that recycling post consumer paper will produce thousands of inner city jobs as well as manufacturing jobs at the plants that build de-inking technologies. For example, one 100% post-consumer, chlorine free paper sorting, deinking and paper manufacturing project under development in NYC, privately financed and which by itself could supply all the recycled fiber needed by the federal government to meet a 20% standard, will produce more than 500 jobs in the South Bronx, one of the most economically depressed urban areas in the U.S.¹⁰

Moreover, recycling post-consumer paper will reduce the waste disposal component of businesses' operating costs and in that way help preserve the profitability of businesses, thus helping to preserve jobs. For example, according to Boston's Economic Development and Industrial Corp., 10,000 jobs can be produced in that city via environmentally oriented investments, with most of

⁹ Bruce Pulver, Vice President, Hambro Resource Development Inc. New York, N.Y. Personal communication to Dr. Allen Hershkowitz, Sept. 23, 1993.

¹⁰ Preliminary Cost Estimate for the South Bronx Paper Sorting, Deinking and Manufacturing Facility, August 20, 1993. Prepared by The BARC Group, P.C.

those jobs coming from the development of recycling industries.¹¹ Similarly, NYC's Dept. of Economic Development has concluded:

New York's effort to develop recycling-related industries occurs against the backdrop of a continuing decline in routine production activity in the city. [P]ursuing the development of recycling-related industries makes sense, for several reasons.

First, the development of these industries will result in the creation of new business and job opportunities. We estimate that during the next five years, creation or expansion of recycling-related businesses could create 3,000 to 4,000 new jobs within the city. Many of these will be jobs that can be filled by people with limited skills. Moreover, most of these jobs will be created in areas of the city that the boom of the 1980's all too often passed by...

Development of recycling-related industries can also help businesses throughout the city reduce their waste disposal costs; and can help city government reduce its solid waste management costs as well. Finally, by improving the effectiveness of the city's recycling program, recycling-related industries can help improve the quality of the city's environment -- and thus make New York [and other cities] a more attractive place to live, work and do business.¹²

Ninety-eight percent of all the paper discarded in the U.S. last year was post-consumer paper¹³. Obviously, this is the distorted market problem we need to correct. Indeed, last year Americans spent \$11 billion getting rid of paper waste in the municipal waste stream (out of a total waste disposal bill of \$30 billion).

¹¹ Boston Economic Development and Industrial Corp., Environmental Jobs for the Future: An Action Plan for 10,000 Jobs and A Clean Environment in Boston, (Boston: EDIC) September 1992. (attached)

¹² NYC Department of Economic Development Exploring Economic Development Opportunities in Recycling, Hugh O'Neill and Megan Sheehan, (New York: Urban Research Center, New York University) August 1993, at P. 1. Also, see attachments.

¹³ Franklin Associates, Ltd. Evaluation of Proposed New Recycled Paper Standards and Definitions for the Special Task Force on Standards and Definitions Recycled Paper Committee, Recycling Advisory Council, January 27, 1992. At Table A-1. Attached.

In response to this, hundreds of cities have established recycling programs. Seventy percent of all paper waste in the U.S. wound up at incinerators and landfills. (And twenty five percent of the paper that was collected for recycling was exported to jobs abroad.) If demand for paper recycling does not increase, the viability of municipal recycling programs, and the thousands of jobs that these programs have engendered, will be at risk.

Question # 4: Costs to the Federal Government:

Will the federal government face additional costs if the executive order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content based on the above listed pcm standards?
(Please complete for each of the above scenarios.)

NRDC's Response to Question # 4:

A number of factors must be evaluated in order to estimate the cost the federal government will face after the executive order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content. These include:

- * estimated increases or decreases in the short term and long term price of paper manufactured with post-consumer content for the federal market;
- * estimated tax revenues to the federal government resulting from new investments and jobs caused by the executive order;
- * estimated savings to the federal government resulting from the potential to reduce some below cost timber sales associated with pulp manufacturers who rely on below cost timber sales at federal forests.

When assessed in combination, the likely impact of this Executive Order is towards lower overall costs to the federal government, especially over the long term. Needless to say, retaining the requirement that federal agencies should pay no more for paper than a baseline year, (as the July 9, 1993 draft stipulated) or no more than any increases in the CPI, can limit any price impact to the federal government.

Estimating increases or decreases in the short term and long term price of paper manufactured with post-consumer content for the federal market. Examples exist of price reductions and very

federal market. Examples exist of price reductions and very small price increases resulting from the purchase of printing and writing paper containing post-consumer content higher than that now being considered in this executive order.

For example, the Council of Great Lakes Governors has estimated that that region's taxpayers will save more than half a million dollars per year because of the purchase of paper containing recycled fibers.¹⁴ In general, the cost of purchasing recycled paper may be equal to or slightly higher than that of virgin paper. Similarly, Bank of America pays approximately the same price for many of their recycled printing and writing paper with 15% post consumer content as for the virgin paper and 3% more for paper incorporating 25% post consumer.¹⁵

Some of the cost saving listed by the Council of Great Lakes Governors are as follows:

<u>State</u>	<u>Dist/Brand</u>	<u>Quantity</u>	<u>Avg Price</u>	<u>Savin gs*</u>
Indiana	Zellerbach/Badger Envirographics	2,500,000	\$20.52	\$10,500
Michigan	Leslie/Badger Envirographics	10,270,000	\$20.14	\$275,500
Minnesota	Leslie/ Hammermill	4,500,000	\$20.82	\$1,160
Ohio	Copco/ Hammermill	4,175,000	\$20.35	\$161,700
Pennsylvania	Copco/ Hammermill	4,800,000	\$21.46	\$52,800
Wisconsin	CW Paper/Badger	3,000,000	\$20.53	\$28,060 ¹⁶

¹⁴ Council of Great Lakes Governors Recycled Copy Paper Purchase, personal communications with Juliet Rogers, NRDC from Kendra Giassel, Council of Great Lakes Governors.

¹⁵ Richard Morrison, Senior Vice President, Environmental Policies and Programs, Bank of America, per. communication w/ NRDC. Sept. 23, 1993.

¹⁶ Council of Great Lakes Governors Recycled Copy Paper Purchase, personal communications with Juliet Rogers, NRDC from Kendra Giassel, Council of Great Lakes Governors.

What is clear is that the marginal cost associated with adding new pulping capacity that relies on secondary fibers is much less than the marginal cost associated with adding virgin pulp capacity. Consequently, as the markets for post-consumer expand, and as more and more of our "urban forest" is harvested more cheaply than virgin forest and tree farms, the longer term implications for the cost of paper will be towards less expensive processes. And because de-inking of secondary fibers is less polluting than turning trees into paper, we will realize enormous environmental benefits as well.

Estimating tax revenues to the federal government resulting from new investments and jobs caused by the Executive Order. Another factor that should reasonably be considered when calculating the "costs to the federal government" that will derive from this executive order is the increased payroll tax revenue associated with the increase in jobs and investments from any potential expansion in de-inking capacity. NRDC cannot do so here.

Estimating savings to the federal government resulting from the potential to reduce some below cost timber sales associated with pulp manufacturers who rely on below cost timber sales at federal forests. Time does not permit us to incorporate the full cost potential savings associated with this issue. However, below cost timber sales by the federal government to pulp manufacturers is known to be a substantial subsidy. For example, in the Tongass National Forest alone, two virgin pulp manufacturers, Ketchikan Pulp, owned by Louisiana-Pacific, and Alaska Pulp, last year together received cash refunds from the U.S. Forest Service totalling \$9.8 million, and \$12.3 million in credits for future timber. Through this and other forms of largesse, U.S. taxpayers annually finance the clearcutting of between 10,000 to 20,000 acres a year of Tongass National Forest alone. With more than a third of this timber going into domestic pulp markets, any reduction in the use of virgin timber for papermaking could save taxpayers millions of dollars annually in Tongass Forest alone.



Natural Resources
Defense Council

40 West 20th Street
New York, New York 10011
212 727-2700
Fax 212 727-1773

September 23, 1993

Ms. Kathleen McGinty
White House Office on Environmental Policy
Old Executive Office Building
Washington, D.C. 20501

Dear Katie,

Attached you will find a response from the Natural Resources Defense Council to the questionnaire we received about the Executive Order on recycled content standards for printing and writing paper.

During our meeting with the Vice President last week, he asked NRDC to compile a sample list of states that are purchasing paper at levels with more than 20% post-consumer content. Here is a sample:

STATES WHICH BUY P/W WITH MIN 20% PC
(this includes purchases from 1991 to present)

Alabama(20%)
Georgia(20%)
Kansas(25%)
Louisiana(100%)
Minnesota(40%)
Nebraska(20%)¹

Oregon(25%)
Rhode Island(25%)²

Wisconsin(20%)
Indiana(20%)³

¹ National Association of State Purchasing Officials(NASPO) database

² Conservatree/NASPO 1992 survey reported Oregon and Rhode Island purchased printing and writing paper with 25% post-consumer content.

³ Wisconsin State Bureau of Procurement purchased copy paper for Indiana and Wisconsin with 20% post-consumer content.



John H. Adams
Executive Director

cc: Dr. Allen Hershkowitz

EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION

RESPONSE FROM
UNITED PAPERWORKERS
INTERNATIONAL UNION

September 24, 1993



UNITED PAPERWORKERS INTERNATIONAL UNION

WAYNE E. GLENN

September 23, 1993

Office of the President

President William J. Clinton
Office of the President
1600 Pennsylvania Avenue
Washington, D.C. 20500

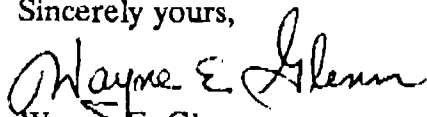
Dear President Clinton:

I am pleased to say that I wholeheartedly support the signing of an Executive Order requiring a percentage of government purchases of paper to include recycled paper.

We support this measure because we believe it will help create jobs and we know very definitely that it will save trees and help preserve our forests.

With kindest regards,

Sincerely yours,


Wayne E. Glenn
PRESIDENT

WEG:pme

**EXECUTIVE ORDER ON FEDERAL
ACQUISITION, RECYCLING, AND WASTE
PREVENTION**

**RESPONSE FROM
U.S. CONFERENCE OF MAYORS**

September 24, 1993



THE UNITED STATES CONFERENCE OF MAYORS

1620 EYE STREET, NORTHWEST
WASHINGTON, D.C. 20006
TELEPHONE (202) 293-7330
FAX (202) 293-2352

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Mayor of Louisville

Vice President:
DAVID DINKINS
Mayor of New York City

Past Presidents:
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Mayor of Lynn
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Mayor of Palatine
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Mayor of Baltimore
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PAUL SOGLIN
Mayor of Madison
BRUCE TODD
Mayor of Austin
KAREN VIALLE
Mayor of Tacoma

Executive Director:
J. THOMAS COCHRAN

TO: Ken Connally
Office of Environmental Policy
The White House

FROM: David Gatton
Senior Environmental Advisor
U.S. Conference of Mayors

RE: Paper Recycling Executive Order

DATE: September 24, 1995

Please find attached the response to your questions regarding the President's proposed Executive Order on Federal Procurement of Printing and Writing Papers. This response is on behalf of the U.S. Conference of Mayors, representing the nation's cities over 30,000 in population, and its affiliate, the Municipal Waste Management Association representing solid waste and recycling directors from our nation's larger cities.

Currently, cities must pay roughly \$200 a ton to collect and process recyclables. At the same time, revenues from the sale of recyclables average only \$40/ton, compared to \$100/ton five years ago. In short, the supply of recyclables exceeds demand. It is incumbent upon the federal government to ensure that its procurement policies ensure the improvement and expansion of markets for these materials.

We look forward to answering any questions you may have.

**RECYCLING EXECUTIVE ORDER
U.S. CONFERENCE OF MAYORS
MUNICIPAL WASTE MANAGEMENT ASSOCIATION**

DEFINITION:

The Administration should retain the statutory definition of "post consumer" contained in the Resource Conservation and Recovery Act for the following reasons: 1) the statutory definition has traditionally been used by most state and local government procurement programs. To change the definition would therefore cause confusion and give mixed signals as to whether the RCRA definition remained operative. 2) It is important to retain the literal meaning of post consumer in order to retain public confidence in recycling. It would be detrimental to the recycling movement for the public to discover that the definition had been changed to include many materials considered pre-consumer by the public. 3) Post consumer material, as currently defined by RCRA, is the type of waste that actually is disposed of in landfills. Expanding the definition of post consumer to include pre-consumer material, which is now reused at a 90 percent rate, would not assist cities in diverting materials away from these landfills or help to solve the nation's solid waste crisis.

CAPACITY:

According to GSA and GPO, federal purchases of printing and writing paper for FY 92 totaled 278,473 tons. For the sake of argument, we will triple this number to take into account purchases by government contractors to a total of roughly 900,000 tons annually. This figure represents no more than six percent of the printing and writing paper purchases in the U.S. If the federal government adopted a 20 percent post consumer standard, roughly 225,000 tons of pc deinked pulp would be required. Current deinking capacity for printing and writing grades is 1.8 million tons. In addition, Union Camp, International Paper, and Burrows have begun capacity expansions for deinked postconsumer fiber. Union Camp's Franklin VA mill alone (on line in 1995) will process over 300 tons/day of deinked pulp (most of which will be post consumer). These figures alone demonstrate ample capacity to meet a 20 percent federal government procurement standard, even before taking into account planned expansions in the printing and writing industry.

A 20% federal pc standard will encourage additional commitments to develop major postconsumer deinking capacity sufficient to meet the federal government's requirements, without disrupting the market. EPA estimates that by 1994, the production of post consumer market pulp will exceed the amount required by the federal government by a factor of 25. Therefore, even under the most aggressive scenario C (20% pc by 1995; 30% by 1999), more than sufficient de-inked pulp capacity will exist within the industry.

SUPPLY:

More than sufficient waste paper materials are available to meet the above de-inked capacity. In Supply of and Recycling Demand for Office Waste Paper, 1990 to 1995 by Franklin Associates, 3.40 million tons of office waste will be collected by 1995. Current estimates for office waste collection for 1993 are 2.5 million tons. Only 3 - 4 percent of this amount of waste paper would be required to meet federal government requirements for a 20 percent pc standard. Furthermore, more than 1.7 million tons of high grade post consumer pulp were exported in 1992, underscoring the point that sufficient supply of waste paper is available for use in domestic production.

JOB CREATION:

It is important to note that in other segments of the paper industry, principally OCC (old cardboard containers) and ONP (old newsprint), significant shifts from virgin to post consumer materials have occurred over the last five years without significant job dislocation. In fact, according the Clean Washington Center, many northwest mills have remained open because they have been able to shift to a secondary source of fiber. As virgin fiber becomes less available and more costly, the paper industry will actually retain jobs over the long run by shifting to post consumer pulp as a source for its paper products.

Furthermore, in addition to job retention in the paper industry, construction of deinking facilities results in significant creation of construction jobs. The Franklin, VA deinking facility alone will create 60 new permanent jobs and 500 direct construction jobs, not including multiplier effects. Furthermore, processing of post consumer materials in waste sorting facilities can create significant numbers of entry level jobs. The typical materials recovery facility will employ 60 to 80 people in low skilled positions, providing many hard-to-employ individuals with opportunities otherwise unavailable. For example, most of the hand sorters in the Springfield, MA materials recovery facility are hired directly from the low income neighborhood in which the facility is located. Because waste paper is recovered in high density urban centers, these jobs in the transportation and processing fields will be available to segments of population facing extremely high long term unemployment rates. In essence, financial resources used to landfill solid waste, will be shifted to processing activities that are more job intensive.

COST/BENEFIT ANALYSIS

All fifty states and over 400 local governments currently have "buy recycled" programs. Many states report that purchases of recycled content printing and writing papers can be competitive with virgin papers. The Federal needs to catch up. For example, the Governor of New Jersey has signed Executive Order No. 91 which requires the purchase of 15% postconsumer for high grade paper products by January.

As far as price comparisons go, the New Jersey Office Supply Catalog lists its recycled

xerographic paper at 8.63% less than its virgin counterpart. The State of Maryland has reported that recycled bids are cost competitive (using a 50/10 standard). The state of Oregon reports that some bids have been cost competitive, while others have required a 5 percent premium. The JCP, itself, has begun to procure printing and writing papers with 15 percent post consumer content at a price premium of only 2-3 percent.

The City of Seattle has recently procured 50 percent post consumer material paper at a cost lower than previous purchases for virgin paper. The main reason for this competitive price, was the opening of the James River Halsey mill. This is proof that as more de-inked mills expand, therefore providing competition, governments will be able to procure at a competitive price.

According to some industry sources, the additional cost of producing 20 percent post consumer material at large paper mills would be under 4 percent (assuming 10 percent displacement of virgin capacity, 10 percent productivity improvement, and purchase of market rate de-inked pulp). If the mill had its own de-inking capacity, the increase production costs would be estimated at one percent. Therefore, assuming that market competition, not just production costs, determine price, we believe that over time the cost differential of 20 percent post consumer would be negligible.

Furthermore, as we understand the current draft of the executive order, federal agencies would be required to spend no more than the average cost of their past paper purchases. If agencies were required to spend more for recycled content paper, source reduction programs would be required to offset that amount. We estimate conservatively that the federal government could significantly offset any temporary increase in price through source reduction efforts such as double-sided copying.

INCENTIVES:

The purpose of the federal pc standards should be to encourage and to expedite investment in de-inking capacity and to encourage existing large mills to use post consumer material. The 20 percent pc standard (scenario C) will meet both public policy objectives. If the initial pc number is too low, e.g. 10 percent (scenario A), then a disincentive for investment in technology will occur because the industry will conclude that the large paper mills will be able to meet the standard without such additional investment. On the other hand, the 20 percent pc standard (scenario C) will serve as an incentive for de-inking investment, while making it possible for some existing mills to achieve the standard without on-site investments.

AMERICAN
FOREST &
PAPER
ASSOCIATION

September 24, 1993

Mr. Ken Connolly
Office on Environmental Policy
The White House
Washington, D.C. 20500

Subject: Executive Order of Federal Acquisition, Recycling and Waste Prevention

Dear Ken,

Thank you for the opportunity to respond to the recycling-related questions you have posed. As we have discussed before, this is a very complex subject, which is particularly true of the areas explored by your questions. The responses are lengthy but necessary in order to cover the full range of ramifications included in actions related to each question.

Given the investment at stake, both public and private, a vital imperative is to base action on the most solid foundation of established fact. A solid basis of fact is needed for one to make reasoned forecasts about the future. The industry brings fact-based experiences to support its recommendations.

It is the industry that plans the projects, commits at-risk capital and must live with the economic consequences of operating the facilities for 20 years or more. It has publicly demonstrated a reliable and accurate accounting of capacity and recovered fiber consumption reaching back for twenty years through the industry's *Annual Capacity Survey*. The results of a mill-by-mill annual survey of all industry facilities, this report is widely relied upon by Wall Street and other industry analysts, as well as policymakers, as a complete source of unbiased data on firm plans for expansion of capacity and fiber consumption.

Comparisons of existing capacity with plans earlier announced in the survey for the same years show an accuracy to a level of +/-2%. It is not surprising that an accurate source of capacity expansion plans exist. For an industry as capital intensive as the paper industry--the most capital intensive manufacturing industry in the U.S. with a historical average operating rate of 92%--reliable capacity information is essential.

For decades, this industry has risked the capital, collected the recovered paper through volunteers before others had and interest in it, and spent millions of dollars promoting the attractiveness of recycled products. U.S. producers are the largest paper recyclers in the world. The U.S. pulp, paper and paperboard industry created the famous three chasing arrows symbol that is identified worldwide with recycling. We urge that policymakers acknowledge our heritage and experience in adopting public policy.

SUGGESTED QUESTIONS FOR TODAY'S MEETING

Q's FOR INDUSTRY

- Q. IF THE EO INCLUDES A VOLUNTARY 20% POST-CONSUMER STANDARD AND NO COMPANY IS FORCED TO BID ON FEDERAL CONTRACTS, AND NO COMPANY IS FORCED TO CHANGE ITS PRODUCTION PROCESS, HOW WILL LARGE MILLS SUFFER JOB DISLOCATION?
- Q. EVEN IF THERE WERE SOME JOB DISLOCATION, WOULD IT BE OFFSET BY EMPLOYMENT INCREASES IN THOSE OCCUPATIONS WHICH COLLECT AND PROCESS SOLID WASTE MATERIALS?

Q'S FOR ENVIRONMENTALISTS

- Q. ASSUMING THE EO INCLUDES A TOTALLY-CHLORINE-FREE (TCF) STANDARD, WHAT ARE THE TCF ALTERNATIVES AND WOULD THERE BE ENOUGH PRODUCTION CAPACITY TO SATISFY TCF PAPER DEMAND?

THE WHITE HOUSE
WASHINGTON

September 23, 1993

MEMORANDUM FOR BRIAN BURKE, TOM EPSTEIN, T.J. GLAUTHIER, SALLY
KATZEN, ALICE RIVLIN, BOB SUSSMAN, JOE STEIGLITZ,
TRACY THORNTON, PETER YU

FROM: KEN CONNOLLY

SUBJECT: EXECUTIVE ORDER ON FEDERAL ACQUISITION,
RECYCLING, AND WASTE PREVENTION

I would like to invite you to a roundtable discussion on the proposed content standards for federal procurement of recycled printing and writing paper included in the President's Executive Order on Federal Acquisition, Recycling, and Waste Prevention. Representatives from the paper and recycling industries, environmental organizations, cities and unions have been invited. We will discuss recycled content definitions, capacity potential, job impacts, costs or savings to the federal government and incentives. Answers to the questions on the same subjects will be submitted to OEP on Friday and circulated for your review prior to the meeting.

The meeting will take place on Monday September 27, 1993 from 10:30 A.M. to 12:00 P.M. in room 248. Representatives from the following organizations have been invited:

American Forest and Paper Association
Browning Ferris Industry
Conservatree Paper Company
Environmental Defense Fund
James River Paper Corporation
Natural Resources Defense Council
United Paperworkers International Union
U.S. Conference of Mayors

Attached please find letters OEP has received recently on the issue. Please call me at 456-6224 if you have any questions or need additional information.



UNITED PAPERWORKERS INTERNATIONAL UNION

WAYNE E. GLENN

September 23, 1993

Office of the President

President William J. Clinton
Office of the President
1600 Pennsylvania Avenue
Washington, D.C. 20500

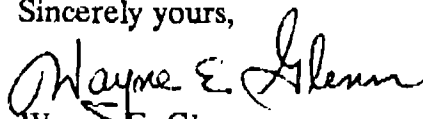
Dear President Clinton:

I am pleased to say that I wholeheartedly support the signing of an Executive Order requiring a percentage of government purchases of paper to include recycled paper.

We support this measure because we believe it will help create jobs and we know very definitely that it will save trees and help preserve our forests.

With kindest regards,

Sincerely yours,


Wayne E. Glenn
PRESIDENT

WEG:pme



United States Government Printing Office
Washington, D.C. 20401

September 14, 1993

Honorable Albert Gore, Jr.
Vice President of the United States
The White House
1600 Pennsylvania Avenue, NW
Washington, DC 20500

Dear Mr. Vice President:

In 1989, the Government Printing Office (GPO) began buying recycled printing paper under the Environmental Protection Agency (EPA) Guidelines for the Federal Procurement of Paper and Paper Products Containing Recovered Materials. As you know, the Guidelines were implemented at GPO by the Joint Committee on Printing (JCP), which has authority over Federal printing papers under Title 44, United States Code. Recently, we have added a 15 percent postconsumer recovered materials requirement to a number of our offset paper purchases. More information on this and our entire program is contained in the enclosure for your consideration.

The enclosed data shows that the majority of printing papers purchased by GPO for in-house production and sales to Federal agencies now significantly exceed the recycled paper content standards established for Federal agencies by the EPA. In addition, following action by the JCP in 1990 to expand recycled content requirements to copier paper, forms bond, and other papers not covered by the EPA Guidelines, GPO now purchases more grades of paper with recycled content than are covered by the EPA Guidelines. As a result, GPO's paper procurement program is among the most environmentally responsible procurement programs in effect in the Federal Government today. Moreover, cost data for the printing papers most commonly purchased by GPO indicate that our recycled paper requirements are being fully met with no significant increase in cost.

Sincerely,

Michael F. DiMario
MICHAEL F. DiMARIO
Acting Public Printer

Enclosure

Copy to: Ms. Kathleen McGinty, Director, White House Office on Environmental Policy
Mr. Kenneth Connolly, Assoc. Dir., White House Office on Environmental Policy

U.S. GOVERNMENT PRINTING OFFICE

RECYCLED PAPER PROCUREMENT PROGRAM

- o Approximately 57 million pounds of paper purchased by GPO each year for inhouse production and sales to Federal agencies are covered by recycled content requirements.
- o Of this amount, approximately 34 million pounds of paper, or 60 percent, significantly exceed the recycled content standards established by EPA. The 34 million pounds covers approximately 12 million pounds of newsprint and 22 million pounds of offset printing papers.
- o GPO buys newsprint to produce the Congressional Record and the Federal Register. The EPA minimum content standard for newsprint is 40 percent postconsumer recovered materials. Since 1991, GPO has been purchasing recycled newsprint with a content of 100 percent postconsumer recovered materials.
- o Because of the favorable price differential for recycled newsprint compared to virgin fiber newsprint, GPO paid \$2.7 million for its current recycled newsprint contract. GPO paid \$2.8 million when newsprint with virgin fiber was last procured, a difference of 4.6 percent.
- o For the 6 most frequently utilized offset printing papers purchased by GPO (JCP A455, Lots 13 and 14, Heatset Web Offset Book; and JCP A460, Lots 16, 17, 19a, and 21, Offset Book), the EPA Guidelines mandate a minimum content of 50 percent wastepaper. Wastepaper may include cuttings and other waste from the paper manufacturing process. There is no minimum content requirement for postconsumer recovered materials. The requirements established by the JCP for these papers, however, are for a minimum content of 50 percent wastepaper, of which 15 percent currently must be postconsumer recovered materials.
- o Even with this content standard, GPO has experienced no problems in procuring fully adequate supplies of the 6 categories of offset paper, at a total cost differential of approximately 3 percent.

U.S. GOVERNMENT PRINTING OFFICE

PROCUREMENT OF RECYCLED COPIER PAPER

- o The EPA Guidelines on procurement of recycled paper do not cover copier paper. In 1990, the Joint Committee on Printing (JCP) implemented a standard for the procurement of recycled copier paper by GPO.
- o The original JCP standard was for recycled copier paper with a minimum content of 50 percent wastepaper. Based on price comparisons for the quarterly contract periods beginning May 1992 and August 1992, the price of this recycled copier paper averaged 31 percent more than comparable virgin paper.
- o In November 1992, based on evidence of market availability, the JCP strengthened the recycled content requirement to a minimum of 50 percent wastepaper, of which 10 percent must be postconsumer recovered materials, or 40/10.
- o Since November 1992, the price differential for 40/10 recycled copier paper, compared to virgin copier paper, has dropped significantly as GPO has procured greater quantities of this paper. The price differential has dropped from an average of 34 percent for the three quarterly contract periods beginning November 1992, February 1993, and April 1993 (when recycled paper comprised an average of 13 percent of all GPO copier paper purchases), to an average of 16 percent for the two quarterly contract periods beginning July 1993 and October 1993 (when recycled paper comprised an average of 34 percent of all GPO copier paper purchases).
- o Currently, only a handful of Federal agencies are ordering recycled copier paper from GPO. The majority of this paper is ordered by EPA, and smaller quantities are ordered by USDA, AID, and Interior.

U.S. GOVERNMENT PRINTING OFFICE

PROCUREMENT OF RECYCLED COPIER PAPER

Definitions:

JCP O-65,

Lot 269b: White, recycled plain copier paper, xerographic; basis, 17 x 22 inches, 20 pounds (75 g/m²). Flat, cut 8 1/2 x 11 inches (216 x 279 mm). Grain long. Must contain minimum of 50 percent wastepaper, including minimum of 10 percent postconsumer recovered materials (40/10). For use in laser printers, high speed plain paper copiers, and xerographic equipment. Truckload shipments only, minimum shipment: 4 million sheets.

JCP O-60,

Lot 270: White, xerographic plain copier paper; basis, 17 x 22 inches, 20 pounds (75 g/m²). Flat, cut 8 1/2 x 11 inches (216 x 279 mm). Grain long. For use in laser printers, high speed plain paper copiers, and xerographic equipment. Truckload shipments only, minimum shipment: 4 million sheets.

Lot No.	Price (per 1,000 sheets) for Quarterly Contract Period Beginning:				
	<u>Nov 92</u>	<u>Feb 93</u>	<u>Apr 93</u>	<u>Jul 93*</u>	<u>Oct 93*</u>
269b	\$3.790	\$3.789	\$3.884	\$3.900	\$3.940
270	\$2.940	\$2.713	\$2.928	\$3.422	\$3.315
% Diff., 269/270	+ 28.9	+ 39.7	+ 32.7	+ 14.0	+ 18.9

*estimated

	Volume (in 1,000 sheets) for Quarterly Contract Period Beginning:				
	<u>Nov 92</u>	<u>Feb 93</u>	<u>Apr 93</u>	<u>Jul 93*</u>	<u>Oct 93*</u>
Total Copier Paper Purch.	541,000	382,560	432,150	404,800	676,200
Total Recyc. Copier Paper Purchased	64,200	40,760	63,800	170,000	170,000
% Recycled to total	12	11	15	42	25

*estimated

DEFENDERS OF WILDLIFE • ENVIRONMENTAL ACTION
 ENVIRONMENTAL DEFENSE FUND • FRIENDS OF THE EARTH
 GREENPEACE USA, INC. • LEAGUE OF CONSERVATION VOTERS
 NATIONAL AUDUBON SOCIETY
 NATIONAL PARKS AND CONSERVATION ASSOCIATION
 NATIONAL WILDLIFE FEDERATION • NATURAL RESOURCES DEFENSE COUNCIL
 SIERRA CLUB • SIERRA CLUB LEGAL DEFENSE FUND
 US PIRG • ZERO POPULATION GROWTH

September 23, 1993

President William J. Clinton
 The White House
 Washington, DC 20500

Dear Mr. President:

On April 21, on the eve of Earth Day 1993, you made a pledge to use the power of federal purchasing to "... provide a market for new technologies, make better use of recycled materials, and encourage the creation of new products ... and create jobs through recycling." We applauded this initiative, but have grown alarmed and frustrated as we watch drafts of your Executive Order on recycled paper procurement crumble under political pressure from a handful of large virgin paper manufacturers.

Our current understanding is that the draft Executive Order requiring federal purchasing of paper with recycled content will require *at best* paper with only 15% postconsumer recycled content, which would rise to just 25% by 2000. This unacceptably limited approach will not adequately strengthen the market for the millions of tons of waste paper that American citizens and businesses are now collecting for recycling. Nor will such low goals leverage the potential job-creation and economic benefits of recycling that accrue when would-be waste materials are transformed into valuable commodities. The Executive Order should instead initiate federal recycled paper purchasing at least 20% postconsumer content, which should rise to 25% or more by 1996.

We are also extremely disturbed by the deletion of the provisions for the federal purchase of totally chlorine free (TCF) paper in the draft Order. These provisions would simply require that federal agencies purchase TCF paper where available at a competitive price, and that agencies reappraise their specifications for paper brightness to facilitate this process. This approach would thus reduce the government's cost of buying paper; the enormous environmental benefits of producing white paper without chlorine compounds are unequivocal.

Your administration faces a number of complex challenges on environmental and economic issues, but buying environmentally preferable paper for the government's own use should not be one of them. As we work with you to constructively address the major

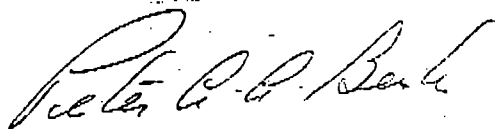
September 23, 1993
Page 2

environmental problems of the 1990's, we urge you to lead by example, and sign a much stronger Executive Order on recycled and totally chlorine free paper.

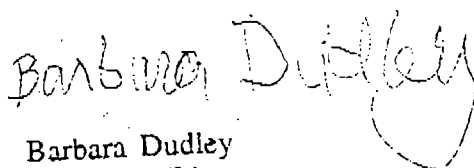
Sincerely,



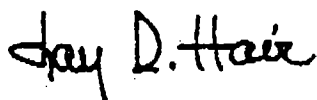
John Adams
Executive Director
Natural Resources Defense Council



Peter Berle
President
National Audubon Society



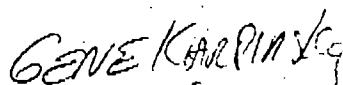
Barbara Dudley
Executive Director
Greenpeace USA, Inc.



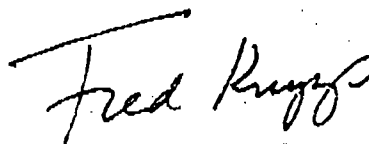
Jay D. Hair
President and CEO
National Wildlife Federation



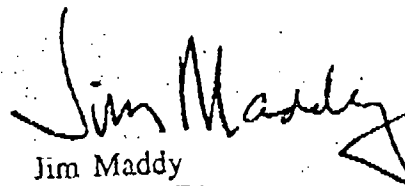
Margret Morgan Hubbard
Executive Director
Environmental Action



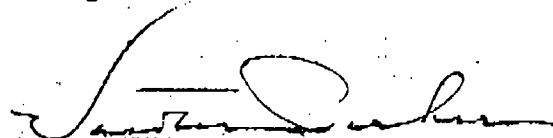
Gene Karpinski
Executive Director
US PIRG



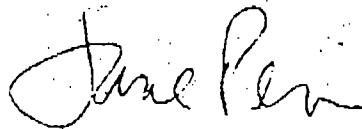
Fred Krupp
Executive Director
Environmental Defense Fund



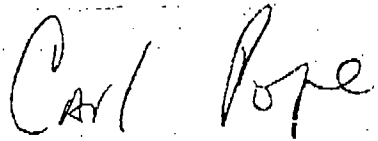
Jim Maddy
Executive Director
League of Conservation Voters



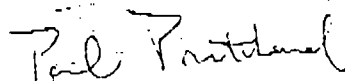
Vawter Parker
President
Sierra Club Legal Defense Fund



Jane Perkins
President
Friends of the Earth

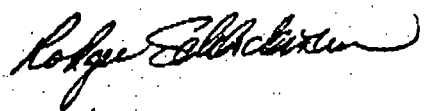


Carl Pope
Executive Director
Sierra Club

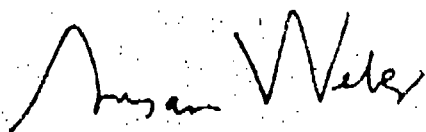


Paul Pritchard
President
National Parks and Conservation
Association

September 23, 1993
Page 3



Roger Schlickeisen
President
Defenders of Wildlife



Susan Weber
Executive Director
Zero Population Growth

cc: Vice President Albert Gore, Jr.
Robert E. Rubin
Laura D'Andrea Tyson
Leon Panetta
Kathleen McGinty

9/22/93

Brian,

Thanks for reviewing
the questions. There's the
five we worked up from
the 4/0 we received.

Ken

EXTERNAL CONSTITUENTS ANSWERING QUESTIONS
ON THE EXECUTIVE ORDER

Environmental Community

Natural Resources Defense Council
Environmental Defense Fund

Cities

U.S. Conference of Mayors

Industry

American Forest and Paper Association
James River Corporation
Conservatree Paper Corporation
Browning-Ferris

Unions

United Paperworkers International Union

THE WHITE HOUSE
WASHINGTON

September 21, 1993

MEMORANDUM FOR INTERESTED PARTIES

FROM: KEN CONNOLLY, OFFICE ON ENVIRONMENTAL POLICY

RE: EXECUTIVE ORDER ON FEDERAL ACQUISITION, RECYCLING AND
WASTE PREVENTION

As you may know, the White House is currently reviewing a draft Executive Order on Federal Acquisition, Recycling and Waste Prevention. The order includes requirements for Federal agencies to begin to procure higher quantities of recycled products, including rerefined oil, retread tires and paper and paper products.

Attached please find a questionnaire about the recycled content standards for printing and writing paper and the potential for procurement of total-chlorine-free paper. Answers to these questions will help White House staff determine final language for these provisions.

Please return the questionnaire by 10 A.M., Friday, September 24, 1993. If you have any questions or need additional information, please call Ken Connolly at (202) 456-6224.

EXECUTIVE ORDER:
FEDERAL ACQUISITION, RECYCLING AND WASTE PREVENTION

Questions Regarding Recycled Paper

Definition

What definition of recycled content should the Federal government use in order to ensure the maximum utilization of postconsumer material (pcm). How does this relate to current practices at the federal, state and local level, and in private paper purchasing initiatives?

Capacity

What capacity constraints, if any, might arise assuming the executive order mandated all agencies to procure recycled printing and writing paper containing the following levels of pcm?

- Scenario A: - a 10% pcm standard immediately
 - a 15% pcm standard by January 1996
 - a 25% pcm standard by January 1999
- Scenario B: - a 15% pcm standard by January 1995
 - a 25% pcm standard by January 1999
- Scenario C: - a 20% pcm standard by January 1995
 - a 30% pcm standard by January 1999

Jobs

What dislocation, if any, could be expected in the pulp and paper production industry if the executive order set the above listed pcm standards for federal purchases of recycled printing and writing paper? What level of job creation would this lead to in this and other industries? (Please complete for each of the above scenarios.)

Costs to the Federal Government

Will the Federal government face additional costs if the executive order requires all federal agencies to begin to procure recycled printing and writing paper with a minimum pcm content based on the above listed pcm standards? (Please complete for each of the above scenarios.)

Incentives

Will the above listed pcm standards for recycled printing and writing paper create the right incentives to ensure that mills of differing sizes begin to use pcm in the production of paper? Is there a better alternative? (Please complete for each of the above scenarios.)