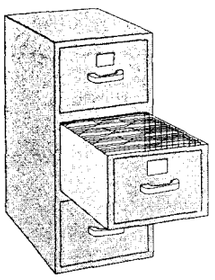

Recovered office paper: The good news and the bad news

by Fred D. Iannazzi and Richard Strauss

Recoverable office paper differs from old newspapers in several critical ways, which increases the difficulty of reaching office paper recovery goals.

For anyone engaged in recovering, processing and selling recovered office paper (OP), we have some good news and some bad news about future market conditions.

The good news is that a significant net demand for OP will develop during 1995, replacing the well-publicized OP glut that has hung over the market for several years. Since "everyone knows" that once a market for recycled paper is established, the recovery of paper will quickly grow to satisfy - or even overshoot-the demand, what's the bad news?

The bad news is that, in the case of OP, what "everyone knows" is not so. Based on hundreds of interviews with office building managers, commercial waste haulers and waste paper processors, Andover International Associates/AIA has concluded that demand-pull will not automatically create a supply of recovered OP.

Since the "market first" approach is the generally approved strategy for increasing recycling of any waste paper grade, and since this strategy is apparently working for old newspapers (ONP), why shouldn't this approach work for OP?

The answer is that different factors control the recovery of the OP and ONP scrap paper grades. We have analyzed and compared the key elements that control the disposition and recovery of both OP and ONP.

Distribution of discarded waste paper

Post-consumer printing and writing (P&W) paper is discarded into two disposition streams of nearly equal size: office/commercial and home (see Table 1). In addition, a relatively high proportion of the P&W paper supply - 15 percent - is discarded as pre-consumer waste during manufacture or converting.

Until recently, the availability of ample pre-consumer waste has satisfied market requirements for recycled P&W paper, hence the glut of post-consumer OP. But with the rapid increase in deinking capacity that will be coming onstream during the next year, a significant fraction of the post-consumer waste P&W paper will have to be recovered to meet demand.

Here we encounter the first major difference between OP and ONP. The 42 percent of the P&W paper supply (primarily magazines, catalogs and junk mail) that is discarded into the home disposition stream will not be segregated and recovered as high-quality post-consumer P&W paper, because it will be more economical to recover this fraction of P&W paper as OMG commingled with ONP in curbside recycling collection programs. Therefore, the only potential source of high-quality post-consumer P&W paper is the 40 percent of the P&W paper supply that is discarded into the office disposition stream.

Table 1 Disposition channels for ONP and OP (1)

Disposition stream	ONP	OP
Pre-consumer	**9% (2)**	15%
Office/commercial	8%	**40%**
Home	**83%**	**42%**
Permanent records	**0%**	**2%**
Total	100%	100% (3)

ONP = Old newspapers.
OP = Office paper.
(1) Percent of total supply discarded in each disposition stream.
(2) Includes newsstand returns.
(3) Numbers do not sum due to rounding.
Source: Andover International Associates, 1994

In contrast, the newsprint/ONP system is virtually a closed loop, because 92 percent of the newsprint is discarded into disposition streams from which it can be recovered as ONP, even assuming that negligible quanti-

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ties of ONP will be recovered from the office disposition stream. It is also important to note that, through residential recycling and waste collection systems, the recovered ONP is in the control of - or the possession of - the municipalities, which can determine the destination and use of the material. On the other hand, most of the potential OP supply is currently collected unsegregated in the office solid waste by commercial haulers, and the municipalities have little or no power to influence whether the material is recycled or dumped by the commercial haulers.

Potential effectiveness of public authority mandates

Since ONP is generally regarded as the model of how public authority actions can effectively increase recycling, we will first examine how the government agency recycling targets/mandates have been applied to ONP and then discuss whether an analogous approach to OP recycling would also be effective.

The largest single use for ONP, which is also the fastest growing market for ONP. is for newsprint and related papers, such as directory paper (see Table 2). All other markets for ONP, such as for paperboard, are essentially flat. Therefore, there is a straight line mathematical relationship between a given percentage of recycled fiber in newsprint and the ONP recovery rate required to supply the fiber. For example, it can be calculated that if newsprint contains 40 percent recycled fiber in 2000 - a common target/mandate - the ONP recovery rate to meet the required supply would be about 61 percent, compared to the 65 percent maximum likely recovery estimated by Andover Intemational Associates/AIA.

The confidence in ONP projections is bolstered by the fact that public agencies collect and control the flow of ONP. It is also easier to implement targets when public authority "persuasion" can be brought to bear on a relatively small group of commercial entities, in this case, the newspaper publishers.

The OP situation is different in every respect. The demand for OP is about equally divided among P&W paper, tissue and everything else, with the first two markets growing relatively rapidly (see Table 3). The segmented market leads to a mathematical prob-

Table 2 Relative size of end-use markets for ONP

	Percent of total demand 1995	1998
Newsprint and other papers	52	59
Paperboard and other uses	32	27
Export	16	14
Total	100	100

Source: Andover International Associates, 1994

OP and QNP: What's the difference?

- ✔Printing and writing papers are generated in roughly equal amounts by residences and businesses, but old newspapers are generated overwhelmingly by residences.
- ✔Public entities often control the collection of residential recyclables, while commercial recyclables are not typically controlled by municipalities.
- ✔The use of significant amounts of ONP by the newspaper publishing industry was stimulated by demand-side legislation and agreements; for the P&W paper industry, the demand for recovered paper already exists, without regulatory mandates.

Table 3 **Relative size of end-use markets for OP**

	Percent of total demand 1995	*1998*
Printing and writing paper	*28*	*35*
Tissue	*34*	*29*
Other high quality (1)	9	*8*
Low quality (1)	*29*	*28*
Total	100	100

(1) Includes export.
Source: Andover International Associates, 1994.

lem in attempting to set achievable targets for recycled fiber content.

There is general agreement that the technology exists or will exist to permit 50 percent recycled fiber content in P&W paper and 70 percent recycled fiber content in tissue, which are the targets generally being proposed by government agencies and industry groups. The mathematical problem in mandating these targets is that potential OP supply is sufficient to achieve only one of the two targets, not both targets simultaneously.

This problem is the result of the fact that P&W paper recycling is not a closed loop: Forty-two percent of the P&W paper supply leaves the system in the home disposition stream, and only 55 percent of the P&W paper supply (pre-consumer waste plus OP) is available for recycling to P&W paper and tissue. In addition, a large fraction of the recovered fiber leaves the system in the form of tissue. Therefore, recycled fiber targets for P&W paper and tissue can only be advisory, with the recognition that there simply is not enough recovered P&W paper potentially available to permit industry-wide achievement of the targets.

In addition to difficulties with the fiber material balance, another factor that inhibits the ability of public authorities to control the recovery of OP is that the material is in the hands of commercial haulers, over whom pub lic authorities traditionally have little or no influence, particularly in light of recent court decisions striking down some flow control ordinances.

Moreover, the end users of P&W paper are much more numerous and diverse than the small group of publishers that control the usage of newsprint, inhibiting the ability of environmental advocates to apply public pressure to an identifiable industry segment. AIA concludes that the ONP model of public authority influence in increasing recycling is simply not applicable to OP, and that any recycled fiber targets/mandates for P&W paper and tissue will have very little practical effect on the total quantity of OP that is recovered.

Effect of avoided costs on OP recovery

As our final point of comparison between ONP and OP, we examine the effect of disposal costs on the initiation of recycling programs. The argument is frequently made that solid waste disposal costs will continue to escalate as landfill capacity disappears and, as a result, most office buildings will voluntarily initiate waste paper recycling programs to avoid the increasing disposal costs.

AIA believes this scenario is wrong on two counts:

- In many key areas, solid waste disposal costs are not increasing and actually are decreasing, particularly for commercial haulers.
- At any conceivable level of disposal costs, the potential cost saving from recycling is not large enough to cause building managers to initiate OP collection programs.

We should point out that the idealized picture of the single-tenant office building occupied by an environmentally sensitive corporation is a rarity in practice. The general pattern is multi-tenant office buildings operated by for-profit management companies, each building a separate profit center, with each building manager making the decisions

on housekeeping matters such as waste hauling or recycling.

But, since the building management is profit-oriented. won't the opportunity to avoid disposal costs by recycling be as persuasive for the building management as it is for a municipality? The short answer to the question is no. because the potential cost saving for-recycling ONP is concentrated in one entity, the municipality, while the potential cost saving for recycling OP is dispersed among hundreds of office buildings.

As shown in Table 4, while the potential saving in disposal costs to the municipality through recovering ONP from residences is quite significant, the potential saving to the typical office building through OP recovery is minimal and, in fact, might even be considered a loss when the additional costs to recycle are taken into account. In any case, the potential saving or loss by recycling OP is insignificant to the building manager, who is dealing with a total operating budget of about $800,000 per year.

As confirmed by numerous AIA field interviews, the decisions by building managements to recover OP will not be made on the basis of economics. Since most building managers are personally environmentally friendly, they will be happy to initiate OP recycling programs if the programs will not increase waste hauling costs, inconvenience the tenants or require extensive supervision by building management.

Table 4 **Potential cost saving in recovery of old newspapers and office paper**

Waste paper generator	Old newspapers (municipality, pop. 700,000)	Office paper (office building, 500 office workers)
Potential recovery (tons/year)	40,000	60
Tipping fee ($/ton)	$60	$60
Potential saving by recovery ($/year)	$2,400,000	$3,600
Incurred cost of collection ($/year)	$1,200,000	$5,000
Net credit or cost of collection ($/year)	$1,200,000	($1,400)

Source: Andover International Associates, 1994.

Will the OP supply satisfy future demand?

AIA concludes that OP is not like ONP - a supply of OP will not spontaneously appear as a result of public authority mandates or the pressure of disposal costs. Nevertheless, there will be a significant and increasing requirement for OP starting in 1995 to supply the mill expansions that are now underway. If OP does not come into the market in sufficient quantity at a satisfactory cost and acceptable quality, at least some of the mills will turn to other grades of recycled paper or to virgin fiber pulp.

There is a lot at stake here for the recycling industry. If we assume that by 1998 there will be a market for approximately five million tons of high quality OP at an average f.o.b. price of, say, $80 per ton, we are talking about a potential $400 million business, which is now but a small fraction of that amount.

Add in the fact that none of this potential new revenue needs to be shared with the generators of the scrap paper - the office buildings -because they will be happy to supply the material at no net cost as long as they can do it with minimum inconvenience.

The good news is that recovering OP will be a very interesting opportunity for commercial waste haulers, recovered paper processors and scrap paper dealers. The bad news is that. at present. there is no clear method to obtain the supply of OP that is needed. RR