EVALUATION OF REGIONAL MARKETING ARRANGEMENTS FOR RECYCLED MATERIALS FOR THE WASHINGTON AREA

Prepared for
THE METROPOLITAN WASHINGTON COUNCIL OF GOVERNMENTS

January 19, 1990

Submitted by
Resource Integration Systems, Ltd.
Hartford • Toronto • Portland • St. Paul

RIS
Ideas that matter.
Ideas that work.

January 19, 1990

Joan Rohlfs, Recycling Coordinator
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Washington, DC 20002

Dear Ms. Rohlfs:

Resource Integration Systems, Ltd. (RIS) is pleased to submit this final report titled "Evaluation of Regional Marketing Arrangements for Recycled Materials for the Washington Area."

The detailed comments on the draft report received from you and the Recycling Committee were reviewed thoroughly, and when appropriate, they were incorporated into this final document. Comments pertaining to information outside of the scope of services, or which were largely subjective and not critical to the report recommendations were not included.

In this final report you will find:

- an Executive Summary, which provides an overview of the report,
- a summary of recycling activity in the study area,
- information on secondary materials markets for the Washington area,
- a review of existing regional marketing arrangements in other areas,
- discussion of two possible regional marketing options for the study area,
- an analysis of costs, financing mechanisms and institutional arrangements of a regional marketing program, and
- a recommended option and methodology for proceeding with a regional marketing arrangement.

I look forward to a full discussion of the report with the Environmental Policy Committee of the Metropolitan Washington COG at the committee's February 8, 1990, meeting.

It has been our pleasure to prepare this report to assist the Metropolitan Washington COG progress in its consideration of regional marketing arrangements. We feel confident that the material we have assembled, supplemented with comments from COG staff and members, will assist the COG in meeting its recycling goals.

Sincerely,

Mary G. Kohrell

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Consultant

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cc: Mitchell Kessler, Eastern Regional Director

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Metropolitan Washington Council of Governments
Evaluation of Regional Marketing Arrangements

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EXECUTIVE SUMMARY

Background

Government-sponsored recycling programs have been operating successfully for many years in numerous member jurisdictions of the Metropolitan Washington Council of Governments (COG). However, recent exponential growth in public and private sector recycling programs across the nation, particularly in the northeast, has created market competition among recycling programs. Regional marketing arrangements in several northeastern U.S. locations appear to be successful in assisting local governments secure stable markets for recyclables.

To this end, COG commissioned Resource Integration Systems, Ltd. (RIS) to perform an evaluation of regional marketing arrangements for recycled materials for the Washington area, focusing specifically on wastepaper, glass, ferrous and nonferrous metal, and plastics.

Methodology

To provide information on the potential supply of recyclable materials in the Washington area, RIS personnel compiled population statistics and data on existing recycling activities, relying on information supplied by COG staff. A representative sampling of local, regional and national markets was drawn to determine the feasibility of market cooperation with a potential regional marketing arrangement. Finally, RIS staff interviewed operators of several existing regional marketing arrangements.

Based upon these investigations, two feasible options for regional marketing in the Washington area were identified:

- COG or another appropriate regional agency as a broker for recyclables;
- COG or another appropriate regional agency as a processor/broker for recyclables

RIS and its subconsultant, Public Management Consultants (PMC), identified economic, program operation, and institutional issues to critically evaluate the advantages and disadvantages of the outlined options. Recommendations were made based upon this evaluation.

Summary of Findings

The RIS consulting team gathered the following key pieces of information through research performed for this report:

- 70,065 tons of recyclable materials, mostly newspaper, were received by COG member, government-operated recycling programs in 1988.
- Recycling market personnel indicate an interest in pursuing regional marketing arrangements for recyclable materials produced in the Washington area.

- Capacity to accept recyclables generated through regional marketing efforts appears to exist among single or multiple companies.

- It is feasibile for COG or another appropriate regional agency to serve as a broker of recyclable materials for COG members choosing to participate. Capital and operating costs of such a regional brokerage could be financed through a combination of grants, in-kind services, and service fees, among other sources.

- There do not appear to be any institutional arrangements which would prohibit the formation of a regional marketing program. However, the advantages and disadvantages of this option to local jurisdictions must be evaluated individually based on existing recycling program design and processing capabilities.

- Several local jurisdictions are presently considering or proceeding with plans to construct material processing facilities. Thus, it does not appear feasible for COG or another regional agency to serve as a broker/processor for all COG members' recyclables.

- If local jurisdictions cannot make arrangements to have materials processed, either by acquiring their own equipment or contracting with other local jurisdictions, then the COG/Regional Agency may explore the feasibility of securing partial processing capabilities for those jurisdictions.

Summary of Recommendations

The evaluation of regional marketing arrangements for the Washington area generated four major recommendations:

1. It is recommended that the Metropolitan Washington Council of Governments or another appropriate regional agency serve as a broker of recyclable materials on behalf of participating members.

Research performed for this report supports the premise that an efficient and effective regional marketing program is feasible in the Washington metropolitan area. The goal of such a regional marketing arrangement should be to maximize benefits to COG's membership while minimizing risk to the COG or the appropriate regional agency acting as a coordinating agency. Member jurisdictions must evaluate whether there are viable advantages to participating in such a program, and to what degree they choose to participate.

2. It is recommended that materials to be initially considered for inclusion in the regional marketing program should include:

- **glass containers**
- **tin-plated steel and bi-metal cans**
- **plastic (HDPE, PET and mixed plastics)**
- **old corrugated cardboard**
- **newspaper**
- **aluminum cans**

Materials chosen for inclusion in a regional marketing program should be selected based on the needs and desires of COG's members and on the feasibility of implementing regional marketing arrangements for that material.

3. The COG or another appropriate regional agency should not secure full processing capacity on behalf of COG members, as this scenario does not appear to be realistic, now or in the future.

The COG or an appropriate regional agency should further explore the option to secure future partial processing capabilities on behalf of its members which may eventually need this service. Adequate time and resources should be dedicated to fully explore processing needs, financing options and ownership/operation ventures this option presents.

4. It is recommended that a sequence for implementation of a regional marketing arrangement should include the following five key phases:

- **Inventory members' needs and plans**
- **Plan and design regional marketing program**
- **Implement the program**
- **Monitor the program and make necessary changes**
- **Determine members' future needs**

Planning and organizing the details of the regional marketing arrangement can be initiated by COG or the appropriate regional agency immediately upon the decision to proceed with such arrangements. It will take an estimated nine months to a year to begin implementing the program, which will change over time to meet the needs of participating jurisdictions.

Summary

The decision to implement a regional marketing program among the members of the Metropolitan Washington COG may provide secure recycling markets to participating jurisdictions. However, it is important to note that successful regional marketing arrangements must be organized and operated with a sense of cooperation among all parties involved – jurisdictions, the coordinating agency, and markets. Failure on the part of any of these involved parties to actively participate in and contribute to the program may lead to the program's failure.

1.0 INTRODUCTION

The need for recycling programs is no longer being questioned in the mid-Atlantic region. Instead, dialogue has largely shifted to a discussion of the best way to establish processing and marketing arrangements, given uncertainties about possible maximum diversion rates, the current newspaper glut, and varied specifications for materials.

As recycling programs develop at a rapid rate in the Washington metropolitan area, the Metropolitan Washington Council of Governments (COG) has wisely decided to explore possible collaboration on marketing issues, in order to maximize market leverage, and to avoid duplication of efforts and competition among its members. Specifically, the COG has commissioned Resource Integration Systems, Ltd. (RIS) to evaluate regional marketing arrangements for the Washington metropolitan area.

Clearly, recycling programs need to be well-planned, stable, and have a sound economic base. Yet programs also need to have the flexibility to respond to a changing market, and to expand to include wider ranges and tonnages of materials. Regional marketing may provide the appropriate mechanism to achieve the desired balance of flexibility and stability. Regional marketing has not yet been attempted on a scale as large as the Washington metropolitan area, however, and there are many questions which need to be explored regarding the feasibility of cooperative marketing for this region.

This report will provide background on markets for secondary materials, and will describe existing cooperative marketing programs and their applicability to the Metropolitan Washington Council of Governments. Two basic options will be outlined for establishing a regional marketing program in the Washington metropolitan area. The first approach relies upon the COG to serve as a broker of recyclables, and the second approach envisions the COG serving as a processor/broker of recyclables. Within each of those options, two possible levels of involvement are portrayed, representing a greater and lesser commitment of resources by the COG.

The report will present an organizational method for operating a regional marketing program, and will address the associated institutional and financial issues. Finally, RIS will make recommendations regarding the most appropriate approach to regional marketing for the Washington metropolitan area, and discuss the necessary steps to implement those recommendations.

2.0 METROPOLITAN WASHINGTON COG MEMBER PROFILE

2.1 INTRODUCTION

The study area for the Evaluation of Regional Marketing Arrangements for Recycled Materials encompasses member jurisdictions of the Metropolitan Washington Council of Governments (COG). The COG is a forum through which local governments of the Washington area can formulate policies, plans and programs of an interjurisdictional nature on community and economic development, transportation, human services, public safety and the environment. The COG's Department of Environmental Programs is involved with addressing the region's solid waste and recycling needs.

Presently, membership in the Metropolitan Washington COG includes the following eighteen jurisdictions: Arlington, Fairfax, Frederick, Loudoun, Montgomery, Prince George's, and Prince William Counties; the Cities of Alexandria, Bowie, College Park, Fairfax, Falls Church, Frederick, Gaithersburg, Greenbelt, Rockville, and Takoma Park; and the District of Columbia.

2.2 DEMOGRAPHICS

The population of the COG study area was determined by COG to be 3,292,900 in 1985 (Table 2.1). Population in these eighteen jurisdictions is projected to grow to 4,078,800 people by the year 2000, an increase of 24 percent. The number of households in the study area was estimated to be 1,245,000 in 1985, which should grow to 1,659,600 by the year 2000. Table 2.1 presents the number of households for the area in 1985 by jurisdiction.

The study area includes the highly developed downtown area of the District, Arlington County and downtown Alexandria surrounded by urban, suburban and exurban rings. Some jurisdictions contain a mixture of each classification. The population in the study area varies widely in income and education levels.

TABLE 2.1
POPULATION AND HOUSEHOLDS BY JURISDICTION

Jurisdiction	1985 Population	Number of Households	2000 Population
Alexandria, City of	108,500	54,200	112,000
Arlington County	157,800	76,100	173,400
Bowie, City of [1]	40,560	15,468	n/a
College Park, City of [1]	23,614	9,397	n/a
District of Columbia	627,400	257,800	634,000
Fairfax County	668,300	238,500	897,600
Fairfax, City of	20,300	7,300	21,000
Falls Church, City of	9,500	4,500	10,800
Frederick, City of [1]	n/a	n/a	n/a
Frederick County	127,700	43,200	164,800
Gaithersburg, City of [1]	n/a	n/a	n/a
Greenbelt, City of [1]	19,395	7,758	n/a
Loudoun County	65,800	22,300	145,700
Montgomery County	628,000	235,300	785,000
Prince George's County	676,900	241,300	772,400
Prince William County	202,700	64,500	362,100
Rockville, City of [1]	45,304	18,121	51,700
Takoma Park, City of [1]	16,231	6,492	n/a
Total	**3,292,900**	**1,245,000**	**4,078,800**

[1] Population/households accounted for in county total, not added to overall total.

Source: Metropolitan Washington COG Cooperative Forecasting: Summary 1988

2.3 PROFILES OF COG MEMBER RECYCLING PROGRAMS

The following section contains data summarizing existing and planned recycling activity in the study area. This information was gathered primarily from the Metropolitan Washington COG *Directory of Local Government Recycling Practices*, and the *Recycling Program Implementation Plan for Arlington County/Alexandria*, (prepared by Malcolm Pirnie/RIS, February 1989) with supplemental information from COG personnel and local officials.

Table 2.2 summarizes data for recycling programs sponsored by local governments in the COG study area. Information from recycling programs sponsored by the private sector, local organizations and others is not included in Table 2.2. Materials included in the summary are wastepaper, including newspaper, corrugated cardboard and high-grade office paper, three colors of glass, ferrous and nonferrous metal, and plastic. Other materials presently being recovered by local jurisdictions, such as leaves and used oil, are not included.

Most jurisdictions in the study area have some type of ongoing recycling program and many have plans for expansion, however, the current level of recycling can be

characterized as light to moderate. Only 10% of the population, approximately 395,000 households, were serviced with curbside collection of recyclables for at least one material. Table 2.2 presents these figures by jurisdiction, and indicates instances where tonnages were not available.

As presented in Table 2.2, 70,065 tons of recyclable material, mostly newspaper, were collected in the study area through curbside collection or at dropoff sites in 1988. Actual tonnage recycled is likely to be somewhat higher, given that tonnages are missing for one or more materials in six jurisdictions.

Fifteen COG jurisdictions had government-operated recycling programs in 1988, and twelve of those offered some form of curbside collection to all or a portion of their residents. Several programs are in pilot phase, with curbside collection service offered only to a small percentage of residents. Other long-standing programs have low participation due, in part, to minimal publicity and education efforts.

Of the fourteen programs currently recycling newspaper, curbside pickup is offered in eleven, and six of those have a mandatory ordinance to recycle newspapers. White goods are recycled in nine programs, with additional ferrous metals collected in four jurisdictions. Six programs collect aluminum cans (three through curbside collection), while glass is recycled in seven jurisdictions, two by curbside. A pilot plastic recycling program has recently been implemented in Rockville, MD.

The District of Columbia had no government-operated recycling program in 1988, but comprehensive recycling legislation passed by the District Council in late 1988 requires a multi-material recycling program, beginning with curbside newspaper collection in October 1989. The District was unable to establish satisfactory market arrangements for the newspaper and is currently stockpiling the material and awaiting installation of a baler. The Cities of Frederick and Gaithersburg also had no programs in 1988, but both plan to join with their county recycling programs.

TABLE 2.2
1988 RECYCLING PROGRAM SUMMARY BY JURISDICTION

Jurisdiction	Material Recycled	1988 Tons	Hhlds Served	Method of Collection	M/V	Other
Alexandria, City of	Newspaper	3,304	30,000	PU/DO	M	Newspaper curbside collection mandatory since 1972.
	White Goods	n/a		PU	V	
Arlington County	Newspaper	700	n/a	DO	V	Three dropoff sites for newspaper.
	Ferrous Metal[1]	889	n/a	DO	V	
Bowie, City of	Newspaper	20	2,700	PU	V	Commingled glass/cans hand sorted by handicapped crew.
	Aluminum	0.6	2,700	PU	V	
	Glass	19	2,700	PU	V	
College Park, City of	Newspaper	780	7,000	PU	V	
	White Goods	n/a		PU	V	
District of Columbia						Numerous private recycling opportunities, news separation began October 1989.
Fairfax, City of	Newspaper	800	7,300	PU/DO	M	Newspaper picked up twice/month.
	White Goods	n/a				
Fairfax County	Newspaper	22,175	238,500	PU/DO	M	Recently expanded to county-wide pickup of news. Goal to recycle 25% by 1992.
	Ferrous Metal[1]	3,000		DO	M	
	Aluminum	n/a		DO	V	
	Glass	55		DO	V	
Falls Church, City of	Newspaper	n/a	2,800	PU/DO	V	Weekly news pickup since 1970.
	White Goods	n/a				
Frederick County	High-grade paper	n/a		PU	V	Planning comprehensive plan.
Frederick, City of						Part of Fredrick County Plan.

TABLE 2.2, continued
1988 RECYCLING PROGRAM SUMMARY BY JURISDICTION

Jurisdiction	Material Recycled	1988 Tons	Hhlds Served	Method of Collection	M/V	Other
Greenbelt, City of	Newspaper	291	2,675	PU/DO	M	
	Aluminum	0.25		DO	V	
	Glass	15		DO	V	
Loudoun County	Newspaper	n/a	n/a	DO	V	Dropoff site is at the landfill.
	Ferrous Metal[1]	n/a		DO	V	
	Aluminum	n/a		DO	V	
	Glass	n/a		DO	V	
Montgomery County	Newspaper	24,590	80,000	PU	M	Plans to expand curbside newspaper collection. Planning a MRF at transfer station.
	Aluminum	142		PU/DO	V	
	Glass	80		DO	V	
	High-grade paper	7,575		PU	V	
Gaithersburg, City of						Is to join Montgomery County program in 1990.
Prince George's County	Newspaper	520	8,600	PU	V	Pilot curbside program is collecting newspaper, aluminum and glass.
	Aluminum	n/a	8,600	PU	V	
	High-grade paper	n/a		PU	V	
	Glass	n/a	1,600	PU	V	
Prince William County	Newspaper	200		DO	V	Dropoff site is at the landfill.
	Glass	15		DO	V	
	Ferrous Metal[1]	2,419		DO	V	
Rockville, City of	Newspaper	1,569	11,144	PU	V	Curbside newspaper collection is city-wide.
	White Goods	206		PU	V	
Takoma Park, City of	Newspaper	700	4,100	PU	M	Studying addition of glass and aluminum to curbside.

[1] Includes white goods

Key: PU-pickup; DO-dropoff; M/V-mandatory/voluntary
Sources: Metropolitan Washington COG Directory of Local Government Recycling Practices, 1988; and Malcolm Pirnie/RIS Arlington County/Alexandria Recycling Program Implementation Plan, 1989

3.0 MARKETS FOR RECYCLABLES

3.1 INTRODUCTION

An understanding of the nature of secondary material markets is vital for the Metropolitan Washington COG to decide whether to pursue regional marketing arrangements. Market research conducted for the purposes of this study revealed a relatively strong regional demand for recyclables to be supplied by COG members, with the exception of newspaper and green glass. Material markets researched for this study include:

- wastepaper - newsprint, corrugated cardboard and high-grade paper
- glass containers
- ferrous metals- white goods, bulky metals and tin-plated steel cans
- aluminum cans
- plastics- HDPE, PET and mixed plastics

The market information, as summarized in this section, is meant to provide COG members with four basic pieces of information for each material:

- an overview of market capacities for COG recyclables,
- an overview of material specifications,
- the advantages of regional marketing for each material, and
- the disadvantages of regional marketing for each material.

Appendix A contains more detailed information on vendors contacted during the study. **It is important to note that the list of vendors included is a representative, but not all-inclusive, sampling of local, regional and national markets.**

3.2 SUMMARY OF MARKET INFORMATION

3.2.1 Wastepaper

Newsprint

Newspaper is the most commonly recycled material in the COG study area at the present time. Current recovery figures shown in Table 2.2 indicate that over 55,000 tons of newsprint were recovered by COG member jurisdictions in 1988. As comprehensive recycling programs in the COG study area continue to be implemented, this annual figure has the potential to grow to a half-million or more tons in a few years.

Market demand for old newspaper has generally fluctuated on a predictable cyclical basis. With the initiation of major newsprint recycling programs across the country, and in the northeast in particular, market demand has been weak for the past year, and it will take some time before demand reaches level of supply.

Table 3.1 presents a listing of paper mills consuming secondary newsprint in the Metropolitan Washington area, along with their capacity in tons/day output and end-product. The consistent supply and availability of this inexpensive secondary material has begun to provoke a market response. New mills and retrofits of existing mills are being planned domestically (i.e., Garden State Paper, Jefferson Smurfit, and Southeast Paper) and overseas. However, construction and retrofitting will take a few years to complete, so there will be a certain amount of lag time before market demand increases substantially.

TABLE 3.1

REGIONAL MILLS USING WASTE PAPER

COMPANY	LOCATION	PRODUCT	CAPACITY (1)	GRADES (2)
Carolina Paperboard	Charlotte, NC	Chip board	115-125	OCC, ONP
Cascades Industries	Rockingham, NC	Tissue	30-75	OP
Celotex	Goldsboro, NC	Roofing felt	430	OCC, ONP
Champion Packaging	Roanoke Rapids, NC	Linerboard	1100	OCC
Chesapeake Corporation	West Point, VA	Medium, linerboard	1100	OCC
Chesapeake Paperboard	Baltimore, MD	Boxboard, chip board	230-250	OCC, ONP
Fort Howard Paper	Rincon, GA	Tissue	1000	OP
Halifax Paper Board	Roanoke Rapids, NC	Chip board	85	OCC, ONP
Halltown Paperboard	Halltown, W.V.	Chip board	180-200	OCC, ONP
Jackson Paper	Sylva, NC	Corrugating Medium	200-225	OCC
Manchester Paper	Richmond, VA	Boxboard, chip board	105-115	OCC, ONP
Mead Corporation	Lynchburg, VA	Laminated board	360-370	unknown
Reading - White Hall	White Hall, MD	Boxboard	40-45	OCC, ONP
Simkins Industries	Ilchester, MD	Boxboard	170	ONP, OP
Southeast Paper Mill	Dublin, GA	De-inked Newsprint	1500	ONP
Stone Container	Hopewell, VA	Linerboard	1100	OCC
Sonoco Products Co.	Richmond, VA	Boxboard, chip board	230-235	OCC, ONP, OP
Weyerhauser	Plymouth, NC	Corrugating medium	2200	OCC

(1) Capacity in tons per day output.
(2) OCC=old corrugated containers; ONP=old newspapers; OP=office papers.

Source: *Resource Recycling* Library

Other potential markets for used newsprint include cellulose insulation and animal bedding industries.

Domestic newsprint consumption is presented in Table 3.2 for states surrounding the COG region. Much of the paper presently supplied by COG members is not being processed by mills in this region. However, these figures are indicative of the current demand for used newspaper by paper mills manufacturing such products as paper board, or chip board, in the mid-Atlantic region.

Table 3.2
USED NEWSPAPER CONSUMPTION [1]
-- Thousands of Tons --

	1989	1990
New Jersey	417	420
Pennsylvania	207	209
Delaware & Maryland	35	35
North Carolina	9	9
Virginia & W. Virginia	76	77
	744	750

[1] Producer Estimates
Source: American Paper Institute

Market research conducted for this study indicates there will be ample long-term market capacity for COG members' used newsprint, and prices will eventually rise. However, according to market sources it is very likely that as the short-term market continues to be glutted with material from new programs, market prices will drop further, and more buyers may be forced to charge higher prices to accept used newsprint. In most cases, however, the price paid to recycle newspaper on the East coast will still be lower than the cost of landfilling the material.

Most paper brokers and mills require that post-consumer newsprint be delivered loose, that is, processed no further than the bundles or bags used by residents in curbside or drop-off programs. Current prices for used newsprint are rarely higher than $5-$10/ton, and many jurisdictions must pay up to $30/ton for brokers/processors to accept the material. Some buyers offer contracts or purchase orders to clients to consistently accept newspaper, while other buyers purchase on the "spot market," that is, they buy secondary newsprint only when they have a demand for the material or can broker it to an end-user at a higher revenue.

Potential markets contacted professed that a regional marketing arrangement for newspaper involving all COG members selling to a single newspaper buyer is not feasible, now or in the future. Company representatives agree that regional marketing arrangements can often bring market stability and higher prices because of consistent qualities and quantities. However, these representatives maintain that a regional arrangement in the Washington metropolitan area would generate a larger percentage of newsprint from one source than is feasible for sound business practice. For example, a buyer for Southeast Paper indicated the tonnage potentially supplied by COG members collectively would be more than 20 percent of that mill's annual consumption. However, a regional marketing arrangement utilizing more than one newsprint buyer could be feasible. Both Southeast Paper and

Chesapeake Paperboard indicated an interest in working with the smaller suppliers of COG's membership in a cooperative effort.

Corrugated Cardboard

Markets for old corrugated cardboard (OCC) are generally strong even while newspaper markets are weak due to a more consistent demand for products manufactured from OCC. Generation rates follow a seasonal trend, increasing when consumer sales of the products shipped in cardboard are high. For example, larger amounts of OCC are generated around the fall school shopping and Christmas holiday seasons. It is thus common, too, that prices generally decrease when generation is higher. New paper mills being developed to use secondary OCC in the manufacture of such products as linerboard and corrugating medium will strengthen this market with increased seasonal supply. Table 3.3 shows the current consumption of OCC in the states surrounding the Metropolitan Washington area.

Table 3.3
OCC CONSUMPTION [1]
-- Thousands of Tons --

	1989	1990
New Jersey	259	261
Pennsylvania	419	417
Delaware & Maryland	10	10
North Carolina	213	213
Virginia & W. Virginia	591	592
	1,492	1,493

[1] Producer Estimates
Source: American Paper Institute

Specifications for old corrugated cardboard generally require this material to be baled into standard mill-size bales, which are generally 60 inches wide and vary in height and depth due to baler variations. Certain contaminants, such as staples and tape, are acceptable, but waxed boxes and organic residues are unacceptable. Businesses are the primary generators of OCC, with a relatively small amount generated by the residential sector. OCC is primarily marketed domestically.

Revenue for OCC varies depending on processing levels, with staple- and tape-free material earning a higher return. OCC generated from residential sources is generally sold with staples and tape, as is much commercially generated OCC. Some commercial generators, however, produce clean OCC.

According to potential OCC buyers, market capacity for OCC will be adequate in the study area. The bulky nature of this material and the low residential generation rate could make a regional marketing arrangement for OCC advantageous by combining supplies so that shipments to market can be made more frequently, avoiding the need for storage of full OCC loads from single suppliers. Municipally sponsored commercial programs could substantially increase the amount of OCC available for sale. A representative from Stone Container maintains that there will be adequate capacity for commercial OCC generated in the Washington metropolitan area as well.

Office Paper

Office paper recycling programs traditionally recover high grade papers such as computer printout (CPO) and white bond (ledger) papers, which have consistently strong markets and earn the highest revenues of all scrap papers. Some office paper recycling programs include low grade mixed paper, for which markets are volatile and seldom strong. Studies indicate that as much as 70 percent of an office building's solid waste can consist of high grade papers. As the term implies, office paper is generated in offices, including commercial, institutional, industrial and municipal offices. Most office paper recycling programs are operated by private sector paper brokers or end users. Table 3.4 outlines the consumption of high grade office papers by paper mills in states surrounding the study area. Mills use secondary high and low grade office papers to manufacture such products as writing paper and tissue.

Table 3.4
OFFICE PAPER CONSUMPTION [1]
-- Thousands of Tons --

	1989	1990
New Jersey	186	186
Pennsylvania	218	218
Delaware & Maryland	34	34
North Carolina	170	172
Virginia & W. Virginia	53	54
	661	664

[1] Producer Estimates
Source: American Paper Institute

Since most office paper recycling programs are privately operated, processing specifications are generally quite simple. High grade paper must be kept free of such contaminants as carbon paper, plastic-coated papers, and any non-white papers. Mixed paper programs have less stringent requirements, allowing most paper products to be included. Private operators will generally provide storage equipment, and will collect the paper on a regular basis.

Representative market research for office paper conducted for this study revealed a strong demand and adequate capacity for high-grade computer and white ledger papers generated in the region. Markets for low grade office papers are not as strong. An employee from Weyerhaeuser indicated his company performs design and implementation of office paper recycling programs and offers some equipment as a part of its regular customer service, as do several other companies in the Metropolitan Washington area.

While Weyerhaeuser's representative maintained capacity for high grade office paper is adequate, he strongly felt COG members should utilize local companies offering office paper program design and collection services instead of marketing high grade papers regionally. The major reason he provided is that revenue for high grade paper is high when the buyer travels short distances, but revenue will decrease accordingly as the buyer travels further to collect material. Thus it seems that a regional marketing arrangement for office paper may offer COG members no certain advantages if they rely on local companies. However, if COG members could sell office paper directly to a mill or end-user, a regional marketing arrangement could prove quite feasible.

3.2.2 Glass Containers

The majority of used glass containers recovered in the United States are purchased by glass manufacturers for remanufacture into new clear, green and brown glass jars and bottles. Little if any recovered glass is exported from this country for remanufacture. Production of new clear, green and brown glass varies to a certain degree by region of the country, thus it follows that the demand for particular colors of recycled glass is also region-specific. The glass industry has pledged to increase the percentage of cullet (finely crushed glass) used in making glass, thus the market demand for this material should continue to grow and remain strong for each color of glass manufactured in the United States.

Market research has determined there is adequate capacity for COG's color-separated glass. The location of the actual end-user will vary in response to the previously mentioned regional demands for particular colors of cullet. For example, there is currently low demand for green glass in the Washington metropolitan area; if large quantities are recovered, the material may need to be shipped to markets outside the surrounding region.

End-user specifications for recovered glass require that it be color-separated and free of all contaminants, including metals (caps and rings), ceramics, plate glass and mirrors. Some buyers will accept metals with the glass. Labels are acceptable. According to the glass industry, contaminants in recovered glass, particularly ceramic dishes, has jeopardized the inclusion of glass in many municipal recycling programs, and must be closely monitored and addressed through public education programs. Glass bottles and jars are accepted by markets as whole containers or crushed. Crushing is recommended to improve transportation economics, particularly for distant markets. Glass may be shipped by trailer or by rail.

Owens Brockway will pay $50/ton for color separated glass delivered to their facility. If the distance from the supplier to the Owens facility is over fifty miles, Owens Brockway will pay an additional $5/ton to alleviate transportation costs, and will add another $5/ton if the distance is over 300 miles. Owens Brockway does not offer contracts, but instead prefers to issue a letter of intent to purchase recovered glass. Owens Brockway identified these plants as possible markets for glass collected by COG members: clear - Freehold, NJ, Clarion, PA or Huntington, WV; brown - Toano, VA or Huntington, WV; green - Atlanta, GA.

Mitigating the costs for long shipping distances to market is an advantage of a regional marketing arrangement for glass, since combining loads could improve transportation efficiency. Additionally, the larger quantity of material produced by multiple sellers may achieve better market leverage. A disadvantage to this type of arrangement is the potential for contaminated loads which may be originating from a variety of sources. Once glass is loaded and transported, it is almost impossible to determine the source of contamination. A member contributing clean glass would be penalized if its material was commingled with a load containing contaminated glass.

3.2.3 Ferrous Metals

White Goods and Bulky Metals

Markets for scrap metal are strong, but they have been weakened by the existence of polychlorinated biphenols (PCBs) in scrap metal fluff (the debris remaining after appliances are shredded in preparation for shipment to market). Until the issue of PCB capacitors is resolved, many scrap yards are refusing to accept white goods unless they can verify that capacitors have been removed, especially from refrigerators and air conditioners. Recent federal and state intervention has attempted to address this problem. As the turnover of appliances continues and the point is reached when the majority of goods which are recycled were manufactured after the 1976 ban on PCBs, this problem should be eliminated.

Davis Industries, located in Lorton, VA, is one market in the Washington metropolitan area for white goods and scrap metal. Davis Industries requires white goods to be prepared for recycling by removing capacitors. Once these are removed the goods can be marketed as scrap metal. Ferrous scrap must be free of liquids, grease, or sealed containers, but there are no other required specifications. Davis currently pays $10/ton for white goods and $20/ton for ferrous scrap. These prices are for materials delivered to Lorton, however, Davis is willing to make transportation arrangements for minimum quantities of 500 tons/month.

Davis brokers scrap metals to end-users, and professes to have sufficient capacity to market all the white goods and ferrous scrap likely to be generated by the Washington metropolitan area.

One potential advantage to a regional marketing arrangement for white goods and bulky metals is that larger collected quantities of metal can make transportation arrangements easier. A local broker or possibly even a steel mill might be willing to pick up the metals, removing this responsibility from local jurisdictions. This could cause a problem, especially in more densely populated jurisdictions, if pick-ups are not made in a timely fashion and metal piles become excessive. Depending on liability issues surrounding the removal of PCB capacitors, regional marketing arrangements could prove disadvantageous in the case of improper capacitor removal, since each jurisdiction could possibly be held responsible.

Tin-plated Steel Cans

Tin-plated steel cans are usually marketed to tin recovery plants. At such a plant, cans are "de-tinned" with a chemical solution, with the remaining material marketed to a steel mill as high grade scrap steel. Markets for tin and clean steel are relatively strong. Bi-metal cans (tin-plated steel sides and bottom, and an aluminum top) require processing which is somewhat more difficult and markets for this material are more irregular. Long term market trends for steel cans are promising, however, due in part to the recent formation of the U.S. Steel Can Recycling Institute and its commitment to market development.

Locally, AMG Resources Corporation currently pays $50/gross ton (2250 pounds) for clean (no food, labels or bi-metal cans) tin cans delivered to its Baltimore facility. Material containing food, labels and/or bi-metal cans can be delivered to AMG's Pittsburgh, high-grading facility for $50/gross ton. AMG prefers that cans are loose or compacted to a density less than 30 pounds/cubic foot. AMG offers contracts of 5 to 10 years, or longer.

AMG appears to be positioning itself to become the dominant tin and bi-metal can buyer in the Washington metropolitan area. The company plans to develop the capability of accepting contaminated materials in Baltimore within the year This would offer a tremendous regional marketing advantage to COG members, given the proximity of the plant, and the adequate capacity for material. The contract to upgrade this facility has not yet been signed. AMG has expressed definite interest in working with a regional marketing arrangement, seeking the stability of supply this would offer.

3.2.4 Aluminum Cans

Aluminum is the most valuable commodity in recycling programs, currently ranging in value across the nation from $600 to $1400/ton. There is adequate market capacity to consume all of the secondary aluminum potentially generated by COG members in the foreseable future. Virtually all secondary aluminum is marketed domestically with the end market in the U.S. dominated by two companies, Alcoa and Reynolds Aluminum Recycling.

Reynolds Aluminum, contacted to provide representative information on aluminum markets, has mills in Williamsburg,Virginia and Baltimore, Maryland. These are fed by numerous drop-off and buy-back centers which service the Washington metropolitan area. Prices paid are based on the level of processing provided. Reynolds will supply a flattener/blower system and a trailer to ship material to its mills if a minimum recovery of five tons per month can be guaranteed. If the cans are shredded, other markets would be available to buy the material at a slightly higher rate. This more labor-intensive level of processing may not be advisable due to COG's proximity to Reynold's plants.

Aluminum is a very light metal, and comprises less than one percent of municipal solid waste. Higher per ton revenues are earned for greater quantities of aluminum and increased level of processing. Regional marketing arrangement for aluminum would bolster revenues, since COG members together generate larger quantities than each program alone, and would thus be able to sell directly to an aluminum plant. These larger quantities would give the buyer a greater incentive to site trailers and processing equipment for used aluminum, also ensuring higher revenues. The COG's larger member jurisdictions already generate sufficient aluminum to encourage buyers to set up equipment within their boundaries, however, a regional marketing arrangement could extend this benefit to smaller localities as well.

In a regional marketing arrangement for aluminum, material would be sold directly to a large processing company, thus eliminating the need to use local brokers and/or buy-back centers. In some cases, local buy-back centers are already operated by a large processor, such as Reynolds or Alcoa, and are unlikely to be concerned by a regional marketing arrangement. Local companies brokering the material to earn a profit could be affected if they lost their municipal and county clients to larger processors. Since there is currently minimal curbside collection of aluminum in the study area, however, it is unlikely that there are many small brokers who would be affected. Furthermore, it may be possible to integrate local brokers and their existing contracts into a regional marketing program.

3.2.5 Plastics

Plastics may be made from many different resins, several of which are recyclable. Polyethylene terephthalate (PET) and high density polyethylene (HDPE) are the most widely recycled post-consumer plastics, although recent developments in mixed plastics recycling are creating post-consumer markets for PVC, polycarbonate and polypropylene polymers as well. Generally, PET will be marketed separately from HDPE, provided sufficient quantities are collected and processed. When this is impossible, the two plastics sometimes may be marketed mixed at a lower dollar value. A newly developing market for mixed plastics allows all plastic resins to be baled together with no separation required. Granulation of plastic resins, once a relatively popular processing method, is no longer as desirable due to problems with high levels of contamination. Markets purchasing granulated plastic generally require it to be free of paper, labels, and caps, and have no commingling of different resins.

PET and HDPE plastics have a wide range of marketability. Demand is high for secondary PET and HDPE and markets have been stable. Several large chemical companies have become involved in plastics recycling and markets are likely to remain strong. Low grade mixed plastics currently have limited markets; however, new initiatives in mixed plastics, by companies such as such as Dow Chemical, Mobil, and DuPont, may strengthen this market. As presented in Table 3.5, little plastic is exported for remanufacture. Rather, the majority of secondary plastics sold for recycling in this country are marketed domestically.

Table 3.5
1989 PLASTICS EXPORTS (January thru June)

GRADE	PORT	KILOGRAMS
Ethylene scrap	Baltimore	16,316
	Norfolk	286,550
	Philadelphia	398,400
		701,266
Styrene scrap	Baltimore	0
	Norfolk	0
	Philadelphia	225,876
		225,876
Vinyl chloride	Baltimore	0
	Norfolk	89,510
	Philadelphia	3,195
		92,705
Other grades	Baltimore	74,248
	Norfolk	939,109
	Philadelphia	677,474
		1,690,831
		2,710,678

Source: *Resource Recycling* Library

Prices for PET range from $40 to $200/ton, based on specifications, with clean, clear, baled or granulated PET without caps receiving the highest price. HDPE prices range from $100 to $200/ton, while mixed plastic prices are in the $60/ton range. A representative

sampling of potential markets for the Washington metropolitan area, each with particular material specifications, includes:

- Wellman, Inc, South Carolina, purchasing PET,
- Pure Tech International, New Jersey, Shuman Plastics in New York, and Alaric Incorporated in Florida, all purchasing both PET and HDPE, and
- M.A. Polymers, Georgia, and Domtar Packaging, Ontario, buying mixed plastics, HDPE and PET.

An obvious advantage to a regional marketing arrangement for plastic is that by combining supplies of this light material, larger supplies can be accumulated and sold more frequently. High-density bales of plastic may weigh no more than 800 pounds, but occupy 60-90 cubic feet; thus, a large facility is needed to store a full load of this material. Through a regional arrangement where a buyer agrees to make more than one stop per load, storage needs are reduced, and revenue flow is more regular. There is a scarcity of secondary plastic fibers available and a regional marketing arrangement would provide sufficient volume of material to attract many buyers for those resins.

According to markets contacted, most buyers, regardless of whether they purchase one plastic resin or a variety of resins, have stringent specifications and accept material in only a few processed forms. However, almost all buyers will accept baled material separated by resin type and by color. Most companies will not accept recycled plastic in more than one form on the same shipment. These factors underscore the need for equipment with compatible plastic processing capabilities throughout the COG region in order for a regional marketing arrangement to be effective for plastics.

4.0 INTRODUCTION TO AND EXAMINATION OF REGIONAL MARKETING ARRANGEMENTS

4.1 INTRODUCTION

One potential strategy for maintaining stable recycling markets is the development and implementation of a regional marketing arrangement for one or more recyclable materials. Regional marketing arrangements require cooperation among involved parties, including local governments, non-profit organizations, haulers, processors, or material buyers. The Metropolitan Washington COG may provide the cooperative mechanism needed for successful regional marketing arrangements among its interested members.

This section will provide background details on existing statewide, countywide and local regional marketing programs, and will examine the possible application of this strategy to the Metropolitan Washington region.

4.2 CASE STUDIES OF EXISTING REGIONAL MARKETING ARRANGEMENTS

4.2.1 New Hampshire Resource Recovery Association

Introduction and Organizational Structure: The New Hampshire Resource Recovery Association (NHRRA) was formed and incorporated as a non-profit organization in 1981 by four rural New Hampshire municipalities who had a desire to pool their recycling knowledge and resources. NHRRA is managed by a board of directors, comprised of nine individuals, at least six of whom represent member municipalities, and no more than three representing private business members.

Budget: The initial budget of $25,000, provided in 1981 by a grant from the New Hampshire Governor's Energy Office, allowed NHRRA to hire an Executive Director. Presently, the Association's annual operating budget is almost $300,000. These funds are derived from a variety of sources, including:

- hosting annual conference - 40 to 45%,
- federal and state government grants - 20%,
- membership dues - 15 to 20%, and
- cooperative marketing fees - 10%.

NHRRA Membership: There are six established categories for membership to NHRRA: Municipal/Solid Waste District, Business, Government Agency, Nonprofit, Individual and Student. Municipal dues are payable by March 30, with annual membership running from April 1 through March 30. All other memberships are payable annually at any time. Presently, there are approximately 200 New Hampshire municipal members, and 350 members in the other five categories combined. Recently, NHRRA extended membership to several Vermont municipalities as well.

New Hampshire Demographics: New Hampshire's current population is approximately one million residents. Of the 234 municipalities in the state, 13 are classified as cities, with populations ranging from approximately 15,000 to 100,000, while 223 municipalities are towns ranging in size from 100 to 20,000 residents. The average town population is 5,000. Population in the southeastern one-third of the state is growing rapidly and is suburban, while the remainder of the state is rural in nature.

Cooperative Marketing Program Organization and Operation: The motivating force behind NHRRA's Cooperative Marketing Programs is market stability. By acting as a broker representing a number of recycling programs, NHRRA can guarantee a consistent quantity and quality of material to buyers. This factor often allows NHRRA to secure higher contract prices for recyclables. However, the security of long-term contracts and dealing with reputable buyers who will provide service whether the market outlook is good or bad outweighs any pricing incentives.

Only municipal and nonprofit category members in New Hampshire, and a few Vermont and Maine municipal members (recently added with Board of Directors' approval) are allowed to use NHRRA's regional marketing programs. Participating recycling programs are responsible for collecting and processing recyclables to designated specifications and storing them at their facilities; NHRRA is responsible for marketing the materials to selected buyers. With few exceptions, buyers provide transportation of materials, collecting them from each seller's location in full or partial load quantities. (In the case of partial loads, the buyer stops at two or more places to produce a full load in one trip.) Presently, NHRRA operates cooperative marketing programs for paper, glass, scrap metal, and plastic. A summary of each program is presented in Table 4.1.

NHRRA's procedure for developing and managing marketing programs has three phases:

- market establishment,
- technical assistance, and
- ongoing program management.

During **market establishment**, requests for proposals written by NHRRA staff are sent out to potential buyers of a recyclable material targeted by staff and the Marketing Committee (made up of NHRRA members). NHRRA staff and the Marketing Committe evaluate and select the buyer. The staff drafts and negotiates a contract with the buyer, which is referred to the Board of Directors for final approval.

Once the contract is in place, the NHRRA staff provides **technical assistance** to familiarize members with their responsibilities in the marketing program, especially market specifications. Technical assistance is planned in conjunction with the Education/Technical Assistance Committee (made up of NHRRA members), and includes various brochures, a newsletter, and specific "hands on" training workshops. Members choosing to utilize the marketing program are required to sign a one-year contract to comply with material specifications and also committing their materials to the NHRRA cooperative.

The final phase of marketing program development is day-to-day **program management.** During this maintenance stage, members (sellers) contact NHRRA for a pickup (or delivery) of a full load of processed materials. NHRRA coordinates the pickup/delivery arrangements between the buyer and seller, and performs all accounting duties, such as billing for transportation charges and/or payment for materials. A marketing fee specified in each contract is charged to the member by NHRRA for providing this service (generally 15% of net payment or a flat per ton fee).

Personnel: Staffing needs to operate NHRRA's Cooperative Marketing Programs have grown from one to six and one-half during the programs' six years. Three full-time staff -- market development manager, technical assistance coordinator and

TABLE 4.1
NHRRA COOPERATIVE MARKETING PROGRAMS

PROGRAM/YEAR BEGAN:	Baled Paper; 1983
TERM OF CONTRACT:	December 1987 to December 1990 (amended September 1989)
BUYER:	North Shore Recycled Fibers, Salem, MA
TRANSPORT:	FOB buyer's dock for newspaper, hauling provided; FOB seller's dock all others, 20 ton minimum preferred
PRICE/TON:	Newspaper: maximum $0 for baled or loose, less for small loads Corrugated cardboard: maximum $12, less for small loads Magazines: n/a Mixed paper: maximum $0, less for small loads Ledger and high-grade papers: $50 to $80
# OF PARTICIPANTS:	Approximately 35
1988 TONNAGE:	2,489 tons, includes Baled and Loose paper tonnage
PROGRAM/YEAR BEGAN	Loose Paper; 1988
TERM OF CONTRACT:	July 1988 to July 1991
BUYER:	Manchester Recycling Corporation, Manchester, NH
TRANSPORT:	FOB buyer's dock, no minimum
PRICE/TON:	Newspaper: $ -24 Corrugated cardboard: $0 Ledger and high-grade papers: $25 to $100
# OF PARTICIPANTS:	No active participants at present due to market conditions
1988 TONNAGE:	see tonnage under Baled Paper
PROGRAM/YEAR BEGAN	Glass; 1983
TERM OF CONTRACT:	March 1989 to March 1990
BUYER:	New England CRInc., North Billerica, MA
TRANSPORT:	FOB seller's dock, 20 ton minimum per one or two sites
PRICE/TON:	Clear: $0 to $22; green: $0 to $5; brown: $0 to $15
# OF PARTICIPANTS:	Approximately 20
1988 TONNAGE:	928 tons
PROGRAM/YEAR BEGAN:	Scrap Metal; 1985
TERM OF CONTRACT:	July 1988 to July 1991
PROCESSOR	Jewell Logging, Inc., Lebanon, NH
TRANSPORT:	Processed metal is hauled by processor from site to market at $3 per loaded mile
PRICE/TON:	$75 hourly processing fee, revenues vary ($35 to $80 range) depending on metal grade and market
# OF PARTICIPANTS:	Over 120
1988 TONNAGE:	9,118 tons
PROGRAM/YEAR BEGAN:	Mixed Color HDPE Plastic; 1988
TERM OF CONTRACT:	August 1988 to August 1991
BUYER:	Midwest Plastics, Stoughton, WI
TRANSPORT:	FOB seller's dock, 20 ton minimum from multiple stops
PRICE/TON:	Baled: $140; granulated: $300
# OF PARTICIPANTS:	Approximately 10
1988 TONNAGE:	not available, none sold to market during 1988
PROGRAM/YEAR BEGAN:	PET Plastic; 1989
TERM OF CONTRACT:	August 1989 to August 1991
BUYER:	Domtar Inc. Packaging Group
TRANSPORT:	FOB seller's dock, 15 ton minimum from two stops
PRICE/TON:	Clear: $140; green: $60; mixed color: $100
# OF PARTICIPANTS:	Approximately 10
1988 TONNAGE:	not applicable

marketing program manager -- and a part-time education coordinator are presently involved with the marketing programs. There are presently two support staff providing administrative assistance. All employees have responsibilities outside of the marketing programs, such as the annual conference and exposition; best estimates indicate that they each dedicate approximately one-half of his or her working hours to the marketing programs. Growing member participation, however, is increasing the responsibilities of the marketing program manager. In addition, NHRRA's executive director acts in an advisory capacity to overall program management.

Given that NHRRA is a nonprofit organization with an uncertain annual budget because of the nature of its funding sources, the actual number of staff does not always match the demand. During times when all positions are not filled, job responsibilities are shared among existing employees.

Cooperative Marketing Program Specifics: As shown in Table 4.1, NHRRA has established contracts with buyers of each material it markets. Some contracts offer a floor price for the sale of recyclables, others offer a fixed price. In most cases, the terms of the contract offered to NHRRA on behalf of its membership exceed those that would be offered to individual member programs, the exception being New Hampshire's two largest cities, which could have secured equally attractive contracts for some materials on their own merits.

Newspaper marketing, begun in 1983, is NHRRA's longest-standing program. A three-year contract with North Shore Recycled Fibers.was renewed in 1987 with minor changes. The terms of this agreement require members to bale their paper materials (newspaper, mixed paper and corrugated) and store them until accumulating a full load. The buyer is then contacted by NHRRA to pick up the load. Prices paid are based on the "Official Board Markets" Yellow Sheet Index, with floor prices set for each material if market prices fall. In the summer of 1989, North Shore requested to renegotiate the contract because it could no longer meet several terms of the contract, the primary issue being paying a floor price for baled newspaper, FOB the seller's dock, since North Shore was converting its line to handle loose material. The NHRRA, on behalf of its members, successfully renegotiated the contract with North Shore to meet all parties' needs, a task which likely would not have been achieved by individual recycling programs.

To participate in NHRRA's glass program, members collect and store glass in concrete storage bins, and either share glass crushing equipment, or use the bucket on a municipally-owned front-end loader to crush their glass. Prices for each color of glass are fixed for the year-long term of the contract, and are quantity-dependent, i.e. a higher price is paid for a full load of glass produced by one program than through a combination of programs filling a load. The biggest advantage to this program is that a combined load of a single color glass can be picked up from two or three member programs, which decreases individual program storage needs, and offers the buyer a more consistent supply. The major problem that has affected New Hampshire's regional glass efforts over the years is the presence of contaminants in the recovered glass. Many municipalities have been forced to pay transportation costs for their clean cullet after it was rejected by the buyer because it was on a split load with another program's contaminated glass. However, members still feel that the ability to collectively market their glass to stable markets outweighs this disadvantage.

For its scrap metal program, the NHRRA contracts the services of a mobile processor to transport a metal baler to municipal scrap metal piles around the state. The member program is assessed an hourly fee for the baler, and is charged to have baled metal hauled to market. Revenue from the metal sale is returned to the member programs to offset

processing and hauling charges. Marketing the processed scrap metal is the responsibility of the processor. Through this program, NHRRA has earned its largest brokerage fees, since members and the processor are both assessed a per ton fee. The inclusion of PCB contaminated capacitors in processed material has caused concern over the past year, and NHRRA is implementing a training program to instruct its members on proper removal and disposal of the capacitors.

NHRRA's regional marketing programs for HDPE and PET plastic were the two most successful programs initiated by the Association. Contamination of plastics has been a relatively small problem, and buyers seemed quite eager to deal with a regional effort. Furthermore, since there was little existing plastic recycling occurring in the state, there weren't problems with programs having to change their processing techniques to meet the new contract specifications. NHRRA members are required to process their plastics within a range of specifications (separating HDPE from PET) by either baling or granulating. Once NHRRA determines there is enough HDPE or PET plastic available from member programs to fill a load collectively, transportation arrangements are made. This decreases storage needs of individual member programs, and allows plastic to be sold more frequently. Both the HDPE and PET plastic agreements provide a floor price and establish prices based on industry pricing publications.

4.2.2 Montgomery County, Pennsylvania

Six member municipalities of the Montgomery County Consortium, in southeastern Pennsylvania, have been involved in a successful market cooperative for recycled materials since 1983. The Consortium currently markets glass and aluminum to Waste Management, Inc. (WMI) and newspaper to Container Corporation. Both contracts are for a period of one year. The consortium receives $25/ton for glass and $540/ton for aluminum. It pays $25/ton to Container Corporation for its newspaper.

Each community collects recyclables separately and delivers the material to a central storage location at Upper Dublin Township. WMI maintains a staff person at the site almost full time to monitor the quality of incoming materials, and to inform WMI when pick-ups are needed. Container Corporation makes pick-ups on a regular basis. Current generation rates are approximately 8,200 to 8,400 tons per year, about half of which is newspaper. The Consortium does not process the glass or newspaper, however, Waste Management, Inc. has a flattener/blower at the site for aluminum cans.

Membership in Montgomery County's marketing cooperative was offered to all members of the Consortium in 1983, but only the six who are currently involved were interested at that time. Additional towns have recently expressed interest in joining, however, the marketing cooperative may not be able to handle the additional volume of materials at the central storage site. Membership in the marketing cooperative has no special requirements, though each town must sign onto each market contract.

The towns in the Consortium work together in many areas, such as purchasing liability insurance, and thus cooperation in marketing recyclables was a natural extension. Each town in the Consortium is responsible for handling one project, such as insurance; recycling is Springfield's responsibility. No additional staff was hired to administer the marketing agreements; time and personnel are donated by the Town of Springfield.

The Consortium has issued an RFP for marketing PET and HDPE, magazines, and tin/bimetal cans. It is willing to market to separate vendors, but would prefer to have one market for all materials. Maximizing revenues is not the Consortium's goal; rather, it is

interested in diverting material from the landfill, and avoiding accumulation of materials at the central storage site.

4.2.3 Duchess County, New York

The Duchess County Resource Recovery Agency operates a regional marketing program for thirteen municipalities in the county. Total population served is approximately 85,000, representing one third of the county. The program, which began in January 1989, markets glass and HDPE plastic. Municipalities do not pay dues, nor are they bound by a contract. The Agency provides containers and freight costs, and receives all revenues from marketing the materials.

To participate, a municipality has to provide a location for the County to place containers, and also has to monitor the materials. When the container is full, the municipal recycling coordinator calls the Agency. Agency vehicles pick up the recyclables and bring them to a central storage facility where materials are aggregated until there is sufficient volume to ship to market. Glass is collected color sorted and is not processed further. HDPE is collected loose and may be baled, depending on market arrangements.

Currently, the Agency does not have contracts for plastic or glass. Most of the glass is marketed to Anchor Glass. Average prices are $40/ton for clear and amber; $20/ton for green. The Agency had a contract for HDPE with Eaglebrook plastics, until Eaglebrook closed their Middletown, NY plant. The county now markets plastics locally, and is in the process of setting up firmer arrangements.

The Agency is not looking to expand the program to additional towns or to add additional materials at the current time. A county MRF is being developed and future marketing arrangements will be tied into that facility. Options being considered include contracting MRF operations to a private vendor, and including marketing in the contract. The Agency is also looking to contract hauling responsibilities to private or municipal haulers.

4.2.4 Suffolk County, New York

After experiencing difficulty in establishing recycling programs due to low population and low financial resources, five towns in Suffolk County, NY, formed the East End Recycling Association and jointly applied for a grant from the New York State Department of Environmental Conservation. They received a grant for $225,000, sufficient to pay 75% of their costs, including the salary for a recycling manager to assist all five towns in establishing their programs. The East End Association is not a regional marketing program: each town continues to market their own materials separately.

There has been substantial discussion among the Suffolk County Supervisors, a group representing all ten towns in the county, about establishing a cooperative marketing system. In March, 1989, the group signed an agreement to explore the possibilities of such an arrangement. The group is currently exploring legal issues, i.e., how they could legally bind members of the cooperative, and what penalties could be set for withdrawing. Nassau County, which neighbors Suffolk to the west, has expressed interest in being included in a cooperative marketing agreement, and there has also been some expression of interest from New York City. At this stage, however, the program is still conceptual.

4.3 RELEVANCE OF CASE STUDIES TO THE METROPOLITAN WASHINGTON COG

Several relevant factors that apply to the Metropolitan Washington COG can be drawn from the information supplied by other existing regional marketing programs.

In each successful regional marketing venture reviewed, there is an agency or jurisdiction acting as a broker to coordinate the region's efforts. Since the Metropolitan Washington COG already works on behalf of its member jurisdictions in the area of recycling, the use of COG or another appropriate regional agency as a broker may be a natural extension of the organization's present responsibilities. This is advantageous, since members would be dealing with a familiar organization.

To operate a regional marketing program, COG or the agent identified as the region's broker would have primary responsibility, with assistance from participating jurisdictions, for identifying markets, negotiating contractual or purchase order details, determining material specifications, and having primary contact with material buyers. The removal of a majority of these duties from local recycling coordinators means that local coordinators could focus more time on public education and other local recycling program details. In New Hampshire, few municipalities have paid recycling coordinators, so NHRRA's brokering efforts were essential to successful recycling programs. Similarly, in Montgomery and Duchess Counties, county brokers successfully make market arrangements and relieve other county program participants from these responsibilities.

Each regional program reported that an important part of the regional effort was a strengthening of the overall regional program through cooperation by members. An advantage of regional marketing arrangements for the study area is that it could eliminate competition among COG members for the same markets, and at the same time, could strengthen COG's marketing position with other major suppliers in the region. Newer programs and programs in less populated areas of the Washington metropolitan area could especially benefit from a regional arrangement, since they presently have less market leverage on their own.

No existing regional marketing program has the population base, and thus the marketing capacity, of COG. Additionally, COG's larger members currently have greater marketing capacities on their own than do any single members of another regional marketing program. Thus these larger, established recycling programs may view regional marketing arrangements as a disadvantage to their own program. However, combining marketing efforts may allow more efficient marketing mechanisms, such as higher revenues, and better transportation, processing and storage arrangements, to be implemented for particular recyclables, regardless of local jurisdiction size.

Metropolitan Washington COG's membership has a greater mix of urban/suburban programs with more varied levels of processing and collection sophistication than that of any existing regional marketing program. This, too, can be viewed as a disadvantage, since attempting to coordinate a regional effort to market all recyclables collected by COG member recycling programs could be challenging based on members' different capabilities.

5.0 OPTIONS FOR REGIONAL MARKETING ARRANGEMENTS

5.1 INTRODUCTION

This section outlines specific regional marketing arrangement options which may be feasible for the members of the Metropolitan Washington COG, and will examine the advantages and disadvantages of these options to the COG and its membership. Focus in this section has been limited to two regional marketing options:

- COG or Another Appropriate Regional Agency as a Broker for Recyclables, and
- COG or Another Appropriate Regional Agency as a Processor/Broker for Recyclables.

In any regional marketing arrangement planned for the study area, consideration must be given to several factors. One is the possibility that several large COG members may soon procure material processing capabilities in the form of automated material recovery facilities. The ownership and operation decisions made by those members may determine whether or not they will be part of a regional marketing program.

Regional marketing could increase program costs for members who wish to procure privately operated MRFs, because procuring a private vendor to process, but not market materials will result in members having to pay two intermediaries. They will pay the vendor a processing fee and pay the COG a brokering fee. This is likely to be higher than a single fee paid to the COG for processing and brokering materials because the COG does not have to make a profit on the processing of recyclables as a private vendor would.

Some private sector MRF operators are unwilling to enter contracts when they are not allowed to market recyclables. Without the marketing component, it may be more difficult for COG members planning MRFs to procure private sector MRF vendors, which would limit those members to developing publicly owned and operated MRFs. This concern is a result of the basic structure of regional marketing and is therefore not discussed separately under each regional marketing option. The actual level of private sector interest in providing processing services without marketing the materials can only be determined by issuing an RFP or request for expressions of interest.

Other important factors include the legal and institutional authority of COG or another regional agency to act on behalf of its members, which will influence marketing contract arrangements, as well as the extent to which a regional marketing arrangement can be financed. These factors are examined in Section 6.

Based on background information provided by material buyers and other regional marketing program operators, a preliminary conclusion can be made that if a regional marketing arrangement is initiated in the Washington metropolitan area, COG or another appropriate regional agency should be chosen to plan and implement the program. The following section outlines potential program designs and how the regional agency could operate them.

5.2 OPTION ONE: COG OR ANOTHER APPROPRIATE REGIONAL AGENCY AS A BROKER FOR RECYCLABLES

Section Four of this report outlined several advantages of having an appropriate regional agency serve as a broker of recyclables, including:

- The assumption that COG or another appropriate regional agency has established channels of cooperation and communication from past projects which would facilitate a regional program.

- Regional marketing would remove marketing responsibilities from local recycling coordinators, allowing them to concentrate on other recycling program details.

There are varying degrees to which a regional agency can play the role of "broker" to market COG members' recyclables.

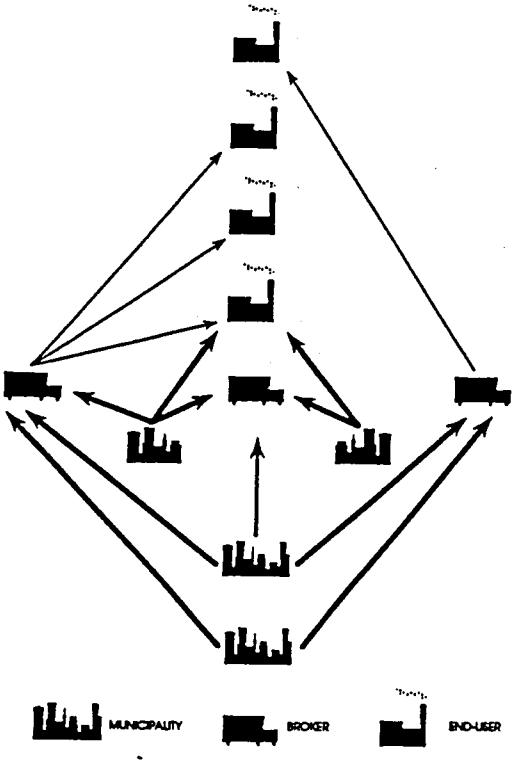
1) As Caretaker
2) As Broker of Specified Materials

Both scenarios make the assumption that local jurisdictions will maintain full responsibility for collection, processing and storage of their own recyclables, while the regional agency assumes the marketing responsibility for materials included in the regional program. It is assumed that transportation arrangements are coordinated by the regional agency. However, any costs incurred for transportation are the responsibility of local jurisdictions. This section sets forth program design and operation details for the broker scenarios outlined above, and discusses advantages and disadvantages to local governments. Finally, the impacts on existing recycling programs are assessed.

5.2.1 COG or Another Appropriate Regional Agency as Caretaker

Presently, each COG member is responsible for making contact with potential markets for its materials. It is highly likely that recycling coordinators are dealing with private brokers, or in some cases, end-users, at this point. Figure 5.1 illustrates the present marketing situation among COG members.

FIGURE 5.1

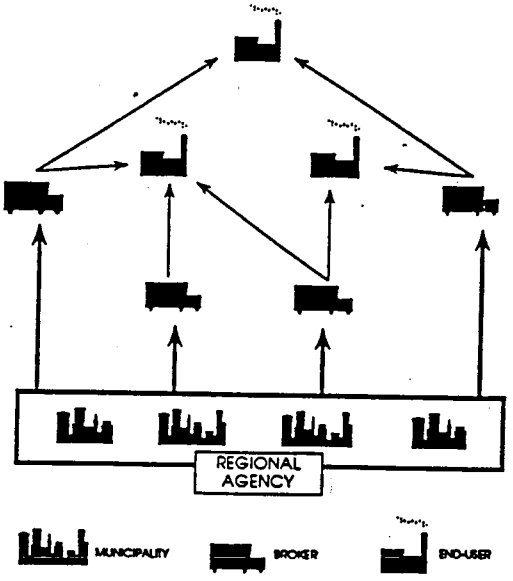


If the regional agency functions as a Caretaker, it assumes the role, now performed by individual recycling coordinators, of finding a buyer for its members recyclables. The regional agency's responsibilities are limited to oversight and "caretaking" of collective efforts to market those recyclable materials included in the regional program. The regional agency would locate and/or contract with a private-sector material broker for each material included in the program. These private sector brokers would then be responsible for ultimately securing end-users. The regional agency would have no direct marketing tasks. Rather, regional agency staff would be responsible for coordinating information on specific materials included in the regional program, especially monitoring tonnages available for marketing.

Program Design and Operation

An example of the design and operation of the Caretaker scenario is presented in Figure 5.2. The regional agency is shown in a coordinating role, responsible for assessing market needs of its members. However, brokers are ultimately responsible for marketing recyclables to end-users or other brokers.

FIGURE 5.2



The decision as to what specific recyclable(s) to market on a regional basis would be made by the members. They would then authorize the regional agency to issue a request for proposals (RFP) to local or regional brokers of the specific materials to be included in the regional program. Members and regional agency personnel would select brokers from among the respondents. Finally, a contract would be entered with the selected broker(s) to guarantee markets for recyclables. Once contracts are in place, the regional agency then assumes the role of alerting participating members to the required material specifications, and also serves as the "contact point" for its members. For example, when members need materials picked up or have a full load ready to deliver, they would contact the regional agency. The regional agency then informs the broker and follows through until the marketing task is completed. The regional agency would assess a brokerage fee (per ton or percent of net revenue) for all materials handled.

This scenario requires the least commitment from the regional agency as a broker in terms of staff needs and in-depth market knowledge. In fact, current staff may be adequate to handle the caretaker role. In this role, the regional agency's primary responsibility is to see that materials flow smoothly from generator to broker and eventually to market. To successfully operate this type of program design requires that regional agency staff have constant contact with participating members to be sure their marketing needs are met. This scenario also allows the program to begin gradually, starting with a single recyclable such as glass, and adding materials over time.

Advantages

- Allows a full range of member processing capabilities from noprocessing up to the most comprehensive processing. Regional agencystaff would simply identify this range and then identify broker(s) capableof handling the material.
- Possibly allows smaller or less established programs to combine their efforts with existing and/or established contracts of larger programs with no adverse affects on the larger programs, if such programs are presently utilizing the services of brokers.
- Removes responsibility of marketing recyclables from local recycling coordinators.

Disadvantages

- Participating members lose revenue to two brokers - once to the regionalagency when it assesses members a service fee, and once to thecontracted brokers, who are paying members less than an end-userwould pay in most cases.

Impact on Existing Local Programs

The scenario frees up local recycling personnel to tend to other program details besides marketing for at least one, and possibly all recyclables. A negative impact is the anticipated cut in revenue from having to pay the regional agency a service fee for its brokering activities, which are currently performed by local personnel. This revenue cut could be offset, however, if local recycling personnel can perform tasks presently being contracted out.

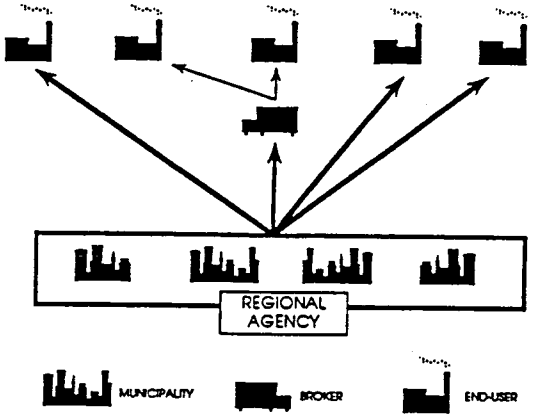
5.2.2 COG or Another Appropriate Regional Agency As Broker of Specified Materials

This scenario proposes that the regional agency assumes the full responsibility of a material broker and enters agreements with material buyers to assure that all recyclables produced by its members are marketed as part of the regional marketing effort. In this capacity, it is fair to suggest that the regional agency would assume the role which brokers currently perform. The major difference is that the regional agency wouldn't purchase the material directly. Rather, the members would turn over the marketing responsibility for their materials to the regional agency, and be reimbursed after the regional agency sold them to an end user. It is imperative that the regional agency have adequate staff with in-depth knowledge of markets able to perform these tasks.

Program Design and Operation

Figure 5.3 graphically portrays an example of this scenario, whereby the regional agency assumes full responsibility for marketing its members' recyclables to end-users.

FIGURE 5.3



In this scenario, the materials to be included in a regional marketing effort would be decided by members. The regional agency would send RFPs to buyers of selected materials capable of meeting members' needs, and buyers would be selected from among respondents. The regional agency would then sign an agreement with each buyer on behalf of its membership. Similar to the first scenario, the regional agency would have primary responsibility to coordinate the processing efforts of its membership to meet required market specifications, and would act fully as the liaison between buyer and sellers. Unlike the Caretaker scenario and the present situation, COG members would be freed from securing contracts with material brokers, having assigned that task to the regional agency. This scenario would provide the regional agency the ability to meet its members' marketing needs without depending on private sector brokers.

Multiple buyers -- all coordinated through the regional agency -- might be necessary for materials where members have varied processing capabilities, or produce a larger quantity than any one buyer can accept. For example, a number of buyers may be necessary to successfully consume the large quantity of newspaper generated by regional agency's regional marketing effort. However, when single end users have adequate capacity to absorb all quantities of a particular recyclable recovered in the region, and still offer flexible material specifications to meet each member's specific requirements, the potential of this scenario is most noticeable. Contracting with a single end-user could earn higher revenues and make transportation arrangements easier, especially for distant markets. Tin cans, plastic and glass are materials that appear to be highly suited to the possibility of contracting with single end users.

Advantages

- Allows for a full range of processing capabilities on the part of members, from no processing up to the most comprehensive processing. Regional agency staff would identify the range of processing abilities on a material-by-material basis, and then determine whether single or multiple buyers are capable of handling each material.

- Where single buyers can meet market needs, higher revenues and more efficient transportation arrangements are possible.
- When contracts are signed with multiple buyers of a particular material, members are assured that the regional agency is responsible for handling marketing arrangements and earning the greatest revenue possible.

Disadvantages

- If the regional agency must broker materials of varying specifications to different markets, participants may not receive the transportation and revenue benefits of regional marketing.
- Where full loads of a particular material being sold to a single buyer originate from more than one local recycling program, contaminants from one program may cause the full load to be rejected, and thus cost innocent programs revenue.

Impact on Local Programs

The impact of the regional agency assuming the marketing responsibility as a broker would be to remove this responsibility from local recycling personnel. In many cases, local programs would gain higher revenues from the sale of recyclables than at the present time due to a regional marketing effort. However, charging a service fee for the regional agency's services could decrease overall revenue from the sale of recyclables. In cases where there is a tipping fee to recycle certain materials, such as is currently common with newspaper, a service fee would increase charges.

5.3 OPTION TWO: COG OR ANOTHER APPROPRIATE REGIONAL AGENCY AS A PROCESSOR/BROKER FOR RECYCLABLES

As recycling programs continue to be developed in the study area there will be an increasing need for additional capacity to process recyclable materials. Material Recovery Facilities (MRFs) are processing centers designed to prepare secondary materials so that they may be marketed as a high quality commodity. The development of processing centers is a growing trend in recycling programs throughout the country, and particularly on the east coast, because it gives program operators a wider range of marketing options. One possible role for the COG or an appropriate regional agency to play as part of a regional marketing program in the Washington metropolitan area could involve procuring one or several MRFs and serving as a processor and broker of recyclable materials for the region.

As discussed in Section 5.2, to participate in a regional marketing program member jurisdictions may be required to meet certain market specifications. For some materials there may be significant latitude in specifications, but for other materials requirements may be narrowly defined. One way to assure that all materials are processed to the same specifications would be for the regional agency to function as a processor of its members' materials. There are varying degrees to which the regional agency can become involved as a processor/broker. Two possible scenarios have been identified:

1) Full Processing Capacity
2) Partial Processing Capacity

In the following processor/broker scenarios, it is assumed that each local program will be responsible for collection, transportation and delivery of recyclables to the regional agency MRF, while the regional agency would be responsible for processing and marketing these materials.

5.3.1 COG or Another Appropriate Regional Agency With Full Processing Capacity

Program Design and Operation

This scenario involves the regional agency procuring sufficient processing capability to serve all its member jurisdictions, or at least those who choose to participate in the regional marketing program. The first step in the design of this program is to determine the processing needs, in terms of tonnages and materials collected, of all participating members. The regional agency then has three options for procuring processing services:

1. Issue an RFP for a private sector firm with existing capability to provide processing services.
2. Issue an RFP for a private sector firm to design, construct and operate one or more regional MRFs.
3. Issue an RFP for a private sector firm to design and construct the region's MRFs, which the regional agency would then operate in the public sector.

Recyclables would be marketed directly from these regional MRFs by the regional agency.

The ownership and/or operation of a MRF is a business venture. If the regional agency decides to procure a MRF or MRFs, it must evaluate the most appropriate role to assume. A policy decision must be made whether the regional agency wants to commit itself to capital investment in MRF development and operations and thus acceptance of the

associated risks, or assume a less involved role by relying more heavily on the private sector. The level of commitment required varies depending on whether the facility is publicly or privately owned and operated, or some combination of those two.

Public ownership and operation of a MRF would demand in-house expertise and personnel devoted to the development and operation of the MRF. Thus, technical issues critical to the success of the MRF which require industry insight and experience become the responsibility of the regional agency. Personnel would be required to maintain knowledge of current developments in the field regarding equipment, operating techniques, and market developments. A greater dedication of personnel than what is currently available will be required by the regional agency.

Private ownership and operation of regional MRFs would not require the regional agency to develop and maintain such in-house expertise, requiring low dedication of resources and risk to the regional agency. If the facility is privately owned and operated, most of the operational responsibility is assumed by the vendor as defined in a contract. Individuals with experience in the recycling industry are generally best suited to assume such commitment and risk.

A public/private ownership and operation design would also likely require only limited resources on the part of the regional agency for allocation of expertise and personnel. Due to the cooperative nature of this scenario, the regional agency would probably maintain some level of oversight requiring administrative personnel. Operations, however, would be a responsibility of the private vendor.

Advantages

- Assures that materials are processed to uniform specifications, which would maximize market leverage and facilitate optimal transportation arrangements.
- All member jurisdictions can meet identical market specifications, which smaller jurisdictions might be unable to do on their own.

Disadvantages

- Development of processing capability is a complicated, expensive process, requiring a large investment of capital resources. It is highly unlikely that the regional agency currently has the necessary resources to establish sufficient processing capability for the entire study area in a timely fashion.
- If a private vendor with existing processing capability is not available, waiting until regional agency MRFs are built could significantly delay program intiation among members, as well as delaying initiation of the regional marketing program.
- It may be difficult to locate adequate available land to develop regional processing capabilities.

Impact on Local Programs

Several of the member jurisdictions are large enough and will generate sufficient volume of materials to warrant their own MRF. Prince George's and Montgomery Counties are two prime examples, and this scenario may indeed conflict with their present plans. Thus, they may decide not to participate in a regional effort.

5.3.2 COG or Another Appropriate Regional Agency With Partial Processing Capacity

Program Design and Operation

This scenario assumes that the regional agency procures processing capacity only for those participating members unable to procure their own. The design of this scenario would begin by assessing which participating members need the regional agency to procure processing capabilities on their behalf. As described in the Full Processing Capacity scenario above, RFPs to design, build and operate the facility could be issued by the regional agency, or the regional agency could contract with a private vendor with existing processing capability. Again, the regional agency would need to decide between public, private or public/private ownership and operation of the facility.

A regional agency owned or operated processing center could fit into the planned network of processing centers in the region and could meet the same processing specifications as the others. Thus, the marketing component of the regional program would not be dramatically altered by the regional agency procuring processing capabilities.

One possible scenario which could be effective is for the regional agency to procure processing capabilities to serve the smaller and more rural jurisdictions. Publicly or privately owned and operated MRFs from other jurisdictions could then be part of the regional marketing program if the operators determined that this was economically feasible. Since private vendors will charge a higher processing fee if they are not receiving revenues from marketing materials, jurisdictions who want to procure private processing facilities will have to issue RFPs to determine the feasibility of tying their MRF into a regional marketing program.

Advantages

- Applies the regional agency's resources where they are most needed. The regional agency processing capability would be most valuable to some of the smaller member jurisdictions who do not generate sufficient volumes to support their own MRF, or else do not have the financial resources or necessary expertise to procure processing capabilities. If the regional agency does not provide processing capability some of these jurisdictions may not be able to meet the market specifications required to participate in a regional program.

Disadvantages

- As discussed in the full processing option, development of processing capability is a complicated and time consuming process.
- It may be difficult to site a regional processing facility.
- If the regional agency procures limited processing capability, transportation costs for hauling recyclables from smaller or more rural jurisdictions throughout the study area to the facility may be very expensive.

Impact on Local Existing Programs

This scenario has a positive impact on smaller existing programs with no processing facility in that it would allow them to meet more rigorous market specifications than they could meet on their own. As in the Full Capacity scenario it also impacts those larger programs presently planning to build MRFs by potentially excluding them from the program, limiting them to publicly operated facilities, or requiring them to pay extra processing fees.

6.0 FINANCIAL AND INSTITUTIONAL CONSIDERATIONS

6.1 INTRODUCTION

Regional marketing costs vary based on options selected and the level of effort applied, as identified in Section 5.0. The main elements of cost for any program will be

- capital costs (property, building, equipment)
- program operations
- program administration, including education and promotion

This section will identify some of the key variables for each type of marketing option identified in Section 5.0, a range of costs associated with those options, financing considerations, and institutional arrangements.

Assumptions which have been made about options include:

- Broker option. The regional agency would assume the responsibility for coordinating member participation, providing market research and RFP development and evaluation for both the Caretaker and Full Broker scenarios. For the full broker scenario, the regional agency would handle contract execution and monitoring, would arrange transportation to end users, and would oversee billing and payment for program participants and for markets.

- Processor/Broker. The regional agency would either contract with a private sector owner/operator, or develop a full service processing facility in the public sector. Under either scenario, the regional agency would enter into market arrangements with local recycling programs as well as brokers and end-users.

6.2 COSTS OF REGIONAL MARKETING

6.2.1 Regional agency as Broker

This option may provide a reliable marketing arrangement for members at the most advantageous cost. The emphasis is on market knowledge and secure contract arrangements, with a minimum of regional agency operational responsibility.

Caretaker Approach

In this scenario the regional agency's current staff and procurement department may be able to fulfill responsibilities without additional personnel. The regional agency staff may desire to use outside assistance to evaluate the RFPs and program effectiveness, however, COG has administered cooperative purchasing agreements in the past for various commodities and appears to have the staff and skills in place to administer a program of this nature.

Full Broker Approach

This scenario requires continual contact with end-users and municipal recycling programs to coordinate pick-ups and deliveries and to maintain up-to-date market information (prices, FOB points, transportation, specifications, etc.). The number of transactions and the arrangements for transactions and accounting can be

extremely labor intensive. This approach requires not only administrative skills but extensive program knowledge and coordination. It is likely that the regional agency would need to hire at least one full-time person with considerable recycling program experience for this option.

Table 6.1 illustrates estimated program costs associated with the caretaker and full broker scenarios. It may be possible to recover these costs through grants from local governments or a transaction fee on participants.

Table 6.1
ESTIMATED BROKER OPTION PROGRAM COSTS
ADMINISTRATIVE COSTS, ANNUAL DOLLARS - 1990

	Caretaker	Full Broker
Direct Labor Costs ($36,000)		
40% time (@ 2 days/week)	$14,400	
100% time		$36,000
Labor Overhead@ 50%	7,200	18,000
Contract Administration (10 % of direct labor)	1,400	3,600
Other services [1]	2,000	2,400
	$ 25,000	$ 60,000

[1] includes other administrative, legal and consulting costs for program implementation

Operational program expenses would be additional to administrative costs identified in Table 6.1. Two key areas which may reflect these operational expenses would be:

- education and publicity
- transportation

These expenses would vary, depending on the level of involvement on the part of the regional agency, and the services or level of involvement of local markets (for transportation) and participating municipalities (for education/promotion). For the next level of planning and for implementation of recycling in the region, these costs will need to be more closely identified.

6.2.2 Regional agency as Processor/Broker

The processor/broker scenario assumes that the regional agency receives recyclables from participating municipalities, prepares the materials to the specifications established by the end-user or other markets, and maintains secure markets for participating members. This approach would require that the regional agency secure processing capability for collected recyclables, either directly through development of a new material recovery facility (MRF), or indirectly through contract with a private processor or existing MRF.

The regional agency has three options for establishing this processing capability:

1. A regional agency-owned and -operated MRF. In this public sector scenario, the regional agency would plan, develop, build, and operate a MRF, and would assume responsibility for marketing of recyclables processed at the MRF. Though it is possible that the regional agency may have a role in developing a MRF, it is less likely that the regional agency would want to place itself in the position of operating the facility and developing expertise as a primary marketer of recyclables. This is a high-risk, low-probability option.

2. A regional agency-owned, private-operated MRF. In this scenario, the regional agency would assume responsibility for some or much (to be determined) of the capital cost necessary to establish a MRF (building and equipment, possibly land acquisition), but would contract with a private firm experienced in the field of operating such a facility and marketing the processed materials. This is an option with shared risks and rewards, currently pursued by many public jurisdictions. Terms of a service agreement with the operating entity will define exact costs to be faced by the regional agency in this scenario.

3. Regional agency contracts for services with a private processor. In this scenario, processing of recyclables is privatized, utilizing any existing capacity at private facilities in the service area and the expertise of private firms which may be interested in providing services. This option usually minimizes capital investment needs and may lead to more quickly-established processing operations than either of the other options. As with the shared-responsibility, public-owned but privately operated MRF , terms of a service agreement with the private processor will define exact costs to the regional agency for this service. Revenue from marketed commodities would be a factor to weigh in determining those costs.

MRF operating and capital costs are highly variable. Some of the factors which affect these costs include:

- land acquisition costs
- availability of a pre-existing facility which might be retrofitted
- local area construction costs
- amenities, if any (viewing area, classrooms, etc.) included in a facility
- processing technology (capital-intensive *vs.* labor-intensive)
- materials included in program
- condition of receipt of materials (source segregated? commingled?)
- length of operating contract
- responsibility for disposal of residue or bypass materials

- market arrangements, including length of contract, distance to markets, volume of material, etc.
- deposit-redemption state or non-deposit state (though regional agency region is non-deposit, cost comparisons must consider whether an operating MRF is functioning in a deposit-redemption area.)

Some or all of these factors may apply whether the regional agency provides full processor/broker services, or only partial services (as identified in Section 5.0). The variability in the manner in which processing is established in public jurisdictions, costs involved, and methods of financing this capability, are demonstrated in Table 6.2.

6.2.3 Broker/Processor Next Steps

Because of these variables, it is beyond the scope of this study to closely identify the costs the regional agency may face to establish processing capabilities. At this point in the planning process the regional agency would be best served to determine policy options for marketing based on scope of magnitude estimates of costs involved.

With development of at least two recycling programs in the region which have planned some processing capability, it is possible that other areas of the region would not be well served by developing similar capability. Prior to any decision to commit resources to development of a new MRF, either in the public sector or with some public sector capital investment, it would be in the interests of the regional agency to determine if it would be necessary to process materials prior to marketing.

If the regional agency decides that some processing of collected recyclables is necessary but wishes to minimize its public capital needs, this could be accomplished with a release of a request for qualifications (RFQ) or a request for an expression of interest for a combination of processing and marketing services. If capacity exists in the private sector to either

a) receive/market materials as collected, or
b) process and market collected recyclables,

then the regional agency would be well served to bypass the considerable capital investment necessary and contract with a private processor, if it wishes to pursue some form of processing/broker option.

If a determination is made to pursue processing capability, a more detailed cost analysis would be necessary for the regional agency to identify cost estimates and responsibilities likely to be assumed by its member municipalities, either under an operating agreement with a private firm, or in the public sector. That level of analysis would follow from this study.

6.2.4 Costs to Local Governments

The costs to local government members of participating in either a broker or processor/broker regional marketing program will depend not only on the costs to the regional agency of operating the system but the revenues from the sale of

TABLE 6.2
Representative Recycling Processing Facilities

location	public/private	materials	capacity	capital cost	tipping fee
Philadelphia, PA	private	news,glass,tin aluminum, PET/HDPE	100 TPD	$1.5 million	$5.09/ton paid to the City. The rate is tied to an index which reflects fluctuations in the market value of materials.
Camden County, NJ	publicly owned privately operated	glass, aluminum, tin, [plastic pilot)	60-65 TPD	$480,000 (equipment only)	$0/ton Material revenue above a predetermined amount is divided between vendor and municipalities.
Rhode Island	publicly owned privately operated	news, OCC, glass, tin, PET/HDPE, aluminum	140 TPD	$4.15 million	$0/ton for municipal haulers; $14.75/ton (25% of landfill tipping fee) for commercial haulers.
Somerset County, NJ	public	news, aluminum, tin, glass, PET/HDPE	150 TPD	$3.8 million	Municipalities pay county$10/hh/yr. Excess funds (≈$6/hh) rebated at end of the year.
location A (confidential)	private	news, glass, aluminum, tin, PET/HDPE, OCC	250 TPD	NA	$23-$28/ton
location B (confidential)	private	news, glass, aluminum, tin, PET, OCC	100 TPD	NA	$7.50/ton

recycled materials earned to offset those costs. A National Solid Waste Management Association survey of 24 recycling programs operating in 1988 across the country showed that revenues from marketing of recyclables yielded from 15% to 40% of estimated total program costs. Generally these costs included not only processing and marketing but also collection and education/promotion. Recycling market revenues and avoided cost of solid waste disposal are usually considered as "revenue" factors in calculating operational costs at a MRF or in an agreement with a private processor.

Under the broker option, this study assumes that local governments are able to collect, store, and, when necessary, deliver recyclables to a regional broker or end-user. Local governments keep their recycling revenues, net of a broker's fee to the regional agency.

Under the broker option with the regional agency as caretaker, members would be responsible for a fee for brokering services provided by the broker. This fee could be based on usage by the members desiring this service, on a per-ton basis. For approximately 20,000 tons of material annually, a reasonable broker fee would be $3.00 per ton, not including transportation.

The regional agency would be able to structure this fee in such a way that it could be related to an accepted trade market index. This may assure that market revenues would either cover the fee when markets and materials generate sufficient revenue, or that marketing risks are shared equitably. Proceeds beyond cost to the regional agency for administrative and marketing expenses could then be returned to participating municipalities on a pro-rated basis, which would stimulate greater participation and greater recovery rates.

Some programs use a simple calculation to determine the cost effectiveness of using a broker or MRF for marketing recyclables:

MATERIAL RECYCLING COST EFFECTIVENESS

Material Value =	Weight x (Scrap price + Collection Cost + Processing + Transportation Cost)
Avoided Disposal Cost =	Weight x (Waste Collection Cost +Transportation cost + Tipping fee)
Material Recycling Cost Effectiveness =	Material Value + Avoided Disposal

(Note: units of weight and value should be consistent. Costs are negative.)

6.3 FINANCING OPTIONS

There are two major categories involved in financing a regional marketing program: capital and operations. (For purposes of this study, administrative expenses will be included as operational costs.) The most common means of financing capital costs include:

- surcharge fees
- grants from state governments
- bonding (usually tax exempt)
- low interest loans and tax credits

Operating costs are generally financed through:

- tipping fees
- service fees
- in-kind or donated services

6.3.1 Capital Cost Financing

Surcharge fees

States such as Pennsylvania and New Jersey have enacted surcharge fees on landfill and resource recovery plant disposal to fund recycling programs. Washington DC recently enacted a $3/ton surcharge for disposal at Lorton Landfill and Benning Road Incinerator. Fairfax County and Arlington also have provisions in their contracts with solid waste facility operators to allow a surcharge on tip fees for other public purposes. Funds from taxes such as these are often used to provide a funding pool for grants to local programs and are often made available for capital cost support, including purchase of land, buildings or equipment for materials processing centers, drop-off centers, and other recycling activities. These funds are not often used for operational program support, but are usually available to public and private sector recyclers.

Grants

Some states provide grants through various types of economic development programs, or from funds made available through surcharge fees. These programs often address the development of industrial parks and manufacturing or high tech service companies. In many states, grants are available for site preparation and infrastructure improvements or utility extensions (water, sewer, etc.). In addition to grants, low interest (and in some cases, non-interest) loans are provided to private firms providing new full-time employment. Generally, the loans are based on the job-creating potential of industrial development. A company expanding its plant or building a new facility which adds employees, for example, may be eligible to borrow funds and to apply for low-interest loans. The amount of funding is usually based on the number of jobs created.

Currently, no specific recycling grant programs exist under State of Maryland and Commonwealth of Virginia procedures. The Maryland legislature is currently considering legislation to provide incentives and financial assistance to private recycling companies. A bill (Maryland HB 1584) would provide no- or low-interest loans for capital costs and tax credits for recycling equipment. These incentives are particularly useful in reducing the overall operating costs of a recycling operation in tits early stages.

Both private firms and governments may also be able to receive grants from private sector groups. The Plastic Recycling Corporation of New Jersey, for example, has provided grants to private and public sector recycling operations to install equipment for PET and HPDE recovery. Aluminum companies have located receiving plants in the Philadelphia area to assure their share of the recyclables from that source by reducing transportation needs. Reynolds and Alcoa have also provided trailers at MRFs with large tonnage.

Bonds

Bonds, often tax-exempt, are usually an important funding source for capital program needs. To date, private dividend-producing bonds have not become a widely accepted means of capitalizing recycling programs. A major reason is the volatility of markets for the recovered materials, and the resulting lack of security in return on investment. Government-issued, tax-exempt bonds, on the other hand, are a common method to capitalize necessary public sector activities such as recycling. Governmental entities (counties, municipalities, states) and quasi-governmental entities (authorities and agencies) are usually empowered to raise capital funds in this manner.

Tax Credits

The tax credit approach is used by the states of Oregon, North Carolina and New Jersey to encourage recycling investment. In general, a tax credit is calculated as a percentage of total capital investment — purchase price of equipment or other capital improvements. The credit can then be applied to other state corporate taxes.

Low-interest Loans

Low interest loans are useful in stimulating private investment and can be used, if available, as part of an overall package of incentives to develop an attractive MRF financing scenario. In the long run this will allow a private recycler to make a reasonable return on investment, or a government to lower their costs of recycling.

6.3.2 Operational Cost Financing

In-kind Services

In-kind or donated services can be an important source of funding for a cooperative marketing program. Many local governments have facilities or personnel available to apply toward a recycling program. In the development of a MRF, donated land or the use of property adjacent to an existing public facility may be a means to reduce the overall capital costs of the program. Under a brokerage option, transportation costs could be reduced by combining smaller loads for delivery; one municipality may assume this responsibility as its contribution to the operational cost. In some cases, the regional agency may broker services between member governments to keep costs down. If one community has excess capacity at an existing MRF, it might receive another community's recyclables at a favorable rate to increase the recycling strength of the region. The City of Camden, New Jersey, provided this type of service to the City of Philadelphia in the early stages of Philadelphia's curbside collection program. Commingled recyclables from a pilot recycling district (approximately 4 tons/day excluding newsprint) were delivered to the Camden MRF for processing and marketing at a fee of $10/ton. Philadelphia did not share in the revenues from marketed materials, as did Camden County municipalities, but benefited from the reasonable tipping fee charged.

Service Fees

Service fees are a common method of financing operational costs of a regional marketing system for recyclables. Several existing regional marketing programs charge membership fees, established as a rate (in cents) per capita to partially

finance operating costs. As is the case with private brokers, the marketing cooperative could charge a per-ton fee or a percentage of net sale of materials to secure markets for various commodities. The $3/ton service fee to recover program costs estimated in Section 6.2.4 has been compared to fees charged by private secondary materials brokers. This amount is considered reasonable as an average. Private broker fees would vary depending on the type of material handled, its quantity and quality. Percentages of net sale charged as a service fee in other regional marketing programs range from 10 to 15 percent, depending on the material. For some materials, a preferable arrangement may include a per-shipment fee (e.g., $150 per 40-cubic yard container of old corrugated, loose but flattened).

This fee would reduce the market value of materials for municipalities which are accustomed to receiving financial return on recovered secondary commodities. It also adds to the cost of marketing materials for which there is an off-loading fee (i.e., newspaper, currently). The trade-offs, however, are often seen as preferable. These include:

- combine limited quantities from individual municipalities, to take advantage of economy of scale,
- remove marketing responsibility from local municipality, and
- assure long-term markets and viability of operating program.

Tipping Fees

Tipping fees may be required to successfully operate a brokerage or MRF, depending on the responsibilities of the party in charge of secondary materials markets. The market value of materials can be tied to a mutually-acceptable trade index. If market economics create a situation in which a tipping fee must be charged at a MRF, this can be identified in the operating agreement. The fact that MRFs operate in different market and economic climates is illustrated by the range of fees. In some communities, MRFs pay as much as $10/ton for material received. In others, MRFs need to charge up to $30/ton to recover capital and operating costs after sales.

Further study for any MRF serving the region would need to be completed to determine whether a tipping fee would be a necessary factor in program economics. Important program elements which would affect this decision for the regional agency include:

- materials handled, especially
  - newspaper loose, bagged, de-ink quality only?
  - aluminum?
  - bi-metal and tin-plate cans?
  - low-grade mixed paper?
  - high-grade papers?
  - plastics? PET/HDPE only? mixed plastics?
- division of public sector - private sector responsibilities
- level of processing provided, marketability of materials
- terms of operating agreement, if any.

After a determination of the amount of involvement the regional agency wishes to have, and the level of processing the regional agency may wish to pursue, if any, more detailed projections regarding program costs and operational needs may be developed.

6.4 INSTITUTIONAL ARRANGEMENTS

6.4.1 Introduction

Regional or cooperative marketing is institutionally very similar to the concept of cooperative purchasing which has been successfully implemented in the Washington metropolitan area by the COG. According to information available from the COG, the purchase of a wide range of bulk supplies for the benefit of participating governments has been coordinated by the COG. Pooled procurements such as these provide the benefits of volume discounts from vendors while maintaining the independence and delivery schedules of its members. The COG has documented about $20 million in savings to its members through a cooperative buying program.

Similarly, regional marketing is based on the procurement process. It allows economies of scale to be realized by smaller sellers and encourages buyers to provide their best terms and pricing to the market as a whole. The procurement capability of the COG and their experience with contracting would be particularly useful in entering into market arrangements with brokers under the broker scenario or vendors/contractors under the processor/broker option. In a COG regional marketing program, the procurement and contracting group of the COG or another appropriate regional agency could assist in or be responsible for:

- identifying potential markets,
- procuring bids from responsible end-users/brokers,
- negotiating terms and pricing for members, and
- administering and monitoring contract effectiveness.

In addition to the COG's procurement capability, the Washington metropolitan area has another institutional structure which could be used to develop and apply for funding for facility development if the processor/broker option is implemented - the Metropolitan Washington Waste Management Agency (MWWMA). This agency is a non-profit corporation, formed by the member governments of the COG. The MWWMA was incorporated to provide a regional entity to supplement the efforts of local government in the treatment of solid waste. The by-laws of the corporation specifically state that the MWWMA shall undertake no activities that are competitive with the waste disposal activities of its members. Although the MWWMA is not currently active, it provides a legal and institutional form to pursue MRF development should the members choose to use it. Each COG member jurisdiction is also a member of the MWWMA and has an appointed representative. Although the Articles of Incorporation, Corporate By-Laws and membership are consistent with the objectives of a regional marketing program, a legal analysis would determine how the by-laws and agreements could be constructed to optimally meet the members' current needs. However, it is unclear whether the Agency would be considered eligible as an "instrumentality of government" for the purpose of issuing bonds or applying for grants under state programs.

6.4.2 Commitments of Members to Program

The success of a regional marketing program for the COG membership will depend in large measure on the interest, participation and expectations of its members. Although participation could be voluntary in a broker option, some commitments

from local governments would be necessary to allow the regional agency to incur administrative costs related to implementing this option.

Commitment to the broker option could be in the form of a letter of intent or expression of interest from members desiring to participate in a cooperative marketing program for specific materials. This format would allow the regional agency to gauge the nature and extent of interest from its members. It would also allow the regional agency procurement division to accurately portray the nature of the market supply based on volume, location and pre-processing in any contract solicitation.

Once bids have been received, the commitment to use a regional market contract for all or a portion of the recyclables collected in the area will be based on each government's evaluation of the terms and pricing available compared to other market options they have. Member governments can them commit to use the regional contract for a specified portion of their recyclables and the regional agency can then enter into a contract that meets its members needs. Commitments from member jurisdictions would be for the duration of the contract period (usually, one year) and in a form consistent with their procurement procedures. However, the degree of commitment to use the regional market brokerage will affect its viability. Many brokers or end-users may be willing to extend more favorable terms and pricing than the market currently demands to build customer loyalty in the Washington metropolitan market. If they determine that there is no commitment to a common market approach in the longer term, they will not waste time trying to serve the market through preparing bids.

Beyond the willingness to commit to a regional marketing approach, local governments must have the ability to commit recyclable materials to the market. In some states, waste flow control legislation gives counties the power to direct the flow of trash collected in their boundaries to certain disposal or processing facilities. In areas where local governments have municipal collection of recyclables or drop-off centers, they have de facto control by holding the materials. It will be important for the regional agency to have a clear understanding of the limits of existing ordinances and contractual obligations with private collectors and other MRF facilities in the region to ascertain the potential size and limits of the recyclables market.

In order to implement the processor/broker option, commitments beyond a letter of intent to participate would be required. Similar to other major capital projects in the region, a formal memorandum of understanding would have to be negotiated and adopted by the regional agency and its member governments. Such a vehicle would clearly outline the roles and responsibilities of the regional agency and its members relative to participation, location, financing, and operation of a MRF in the region. It would also address the issue of the appropriate vehicle for implementation, such as the Waste Management Agency or a lead government agency, that will pursue the development and enter into agreements with other member governments. The nature of the MRF investment requires a long term (ten years) commitment to use or pay for the operation and maintenance of the facility. The application for and acceptance of grant funds would make this commitment mandatory.

If a private MRF owner/operation scenario is desirable, the ability to enter into a long term contract for materials delivery and payment would have to be secured by local government ordinance. It is unlikely that any private vendor would consider developing a facility without an assured supply of recyclable materials and/or

processing fees for a term long enough to recover their investment and make a reasonable rate of return.

6.4.3 Commitments to Markets

One of the primary benefits of a regional marketing program is the ability to develop strong relationships with end-users so that an assured market is available to all of the region's members. The attraction of this approach is not just a secure market but attractive pricing and terms. The commitment to pursue these markets should include not just a commitment of materials to a regional program but also commitment to meet user specifications (quality control), delivery schedules and payment/billing terms.

Most recycling programs have been able to market materials through the open market without the use of contracts or long-term agreements. Through the use of a contract, however, members would be able to commit a portion of their materials to an end-use market in return for a guarantee to purchase at a specified price. Under a broker or a processor/broker option, the end-use contracts would likely extend for a period of one year or longer.

The commitments that will be required in making a contract are usually covered in any agreement with the end-user, such as:

- Pricing basis
- Length of commitment
- Quantity of material per day, week or month
- Termination provisions
- Guaranteed delivery/ pick-up
- Conditions for renegotiation
- Material specifications (quality)
- Penalty clause for lack of specific volume

In return for material commitment to markets, end-users may provide not only guaranteed price and market, but may provide advances for handling equipment and storage containers which could lower the overall investment required to meet the market demands.

The strength of these commitments in securing reliable end-use markets will be reflected in the contractual arrangements that may be available. Based on the experience of other programs, there are three basic types of contracts that the regional agency may enter into:

- fixed price,
- floating price, and
- floor/escalator price.

The fixed price arrangement guarantees the same price per ton throughout the length of the contract. The major advantage is the commitment to accept the material at a specified price. The disadvantage is that additional revenues will not be realized during a period of high market demand.

Under the floating price arrangement, the regional agency would have both a guaranteed buyer and an arranged price. Generally, the buyer's price is based on a

standard market quotation specified in the contract. The price is subject to market fluctuations but can be beneficial even when the market demand is low.

The floor/escalation arrangement protects both the buyer and the seller by recognizing the needs and risks on each side. This type of agreement includes an escalation clause similar to the floating price. The seller may also give the buyer a discount for a reasonably high guaranteed floor price. The buyer may agree to pay only a percentage of prevailing market quotes in exchange for guaranteeing the floor price during any market. This would provide the regional agency with a minimum price (or cost) for materials when demand is low, and a higher price, above the floor price, when the demand increases.

The incentive to enter into any of these arrangements will be affected by the quantity and quality of materials that members commit to these markets as well as the long term prospects that the regional market will exist in the future. The attraction to end-users of dealing with one seller in a large market may be an advantage in securing a guaranteed market for materials.

7.0 RECOMMENDATIONS

7.1 REGIONAL MARKETING ARRANGEMENT RECOMMENDATIONS

7.1.1 Recommendation One

It is recommended that the Metropolitan Washington Council of Governments or another appropriate regional agency serve as a broker of recyclable materials on behalf of participating members.

The research performed for this report supports the premise that an efficient and effective regional marketing program can be organized in the Washington metropolitan area. The goal of such a regional marketing arrangement should be to maximize benefits to COG's membership while minimizing risk to the COG or the appropriate regional agency as a coordinating agency. It appears this goal can be accomplished in a mutually beneficial manner through cooperation and compromise among the program's participants. The primary factors supporting this recommendation are:

- COG members can benefit from higher revenues, better transportation arrangements through combined loads, and from the freeing up of local recycling personnel from marketing responsibilities.
- A regional marketing effort with the COG or appropriate regional agency as broker can be financed relatively easily through the assessment of fees to participants in the form of up-front "participation" fees and/or a marketing service charge (per ton or percent of net sale).
- The COG has the ability to sign contracts with markets on behalf of its members.
- Current COG personnel are capable of conducting preliminary work to organize a regional marketing program. Funds needed to hire additional staff to coordinate the brokerage could be obtained in a relatively short time.

7.1.2 Recommendation Two

It is recommended that the materials to be initially considered for inclusion in the regional marketing program should include:

- **glass**
- **tin-plated steel and bi-metal cans**
- **plastic (HDPE, PET and mixed plastics)**
- **old corrugated cardboard**
- **newspaper**
- **aluminum cans**

Materials chosen for inclusion in a regional marketing program will be selected based on the needs and desires of COG's members. There do not appear to be reasonable advantages for regionally marketing scrap metal or office paper in the Washington metropolitan area at this time. The primary factors supporting this recommendation are:

- Present tonnages of glass, tin cans, plastic containers and old corrugated cardboard recovered among COG members are low. Thus, processing capabilities are in their infancy, and contracts with end users or brokers are few. The COG's coordination of processing and contracts for all or some of these materials can expedite their recovery. Additionally, regional markets with single end users for each of these materials is realistic.

- Some COG members are currently experiencing difficulty marketing recovered newsprint. The COG may be able to coordinate marketing of this material more efficiently on a regional level and contract with several end users on behalf of its participating members.

- Including aluminum cans as part of a regional marketing effort will assure higher service fees for the COG, since aluminum cans generally earn the highest revenues of all recyclable materials.

7.1.3 Recommendation Three

The COG or another appropriate regional agency should not pursue the option of securing full processing capacity on behalf of its members, as this scenario does not appear to be realistic, now or in the future.

The COG or an appropriate regional agency should further explore the option to secure partial processing capabilities on behalf of its members needing this service at some future time. The COG/Regional Agency may feel secure in its role as a broker of COG members' recyclable materials after a few years' experience. At that time, the COG and its members may evaluate the need to provide processing services for those COG members without adequate processing capabilities. Anticipating this possibility will allow time to fully explore processing needs, financing options and ownership/operation ventures this option presents. The primary factors supporting this recommendation are:

- Several of COG's members may not be large enough to procure a processing facility alone. Coordination of this effort by COG or an appropriate regional agency could make it more feasible.

- Financing a small MRF appears to be feasible, whether the facility is privately or publicly owned and operated.

- Waiting until the regional marketing program with the COG or an appropriate regional agency serving as a broker is operating smoothly will allow for a more reasonable evaluation of the need for the COG/Regional Agency to serve as a processor/broker.

7.1.4 Recommendation Four

It is recommended that a sequence for implementation of a regional marketing arrangement should include the following five key phases:

- **Inventory members' needs and plans**
- **Plan and design regional marketing program**
- **Implement the program**
- **Monitor the program and make necessary changes**
- **Determine members' future needs**

This section outlines methods for completing these phases, along with a timeline for accomplishing them.

Inventory Members' Needs and Plans

Members should be surveyed to obtain three key pieces of information. These are their:

1. Recycling program objectives and goals
2. Market needs and processing capabilities
3. Legal restrictions regarding local government participation

Defining members' objectives and goals can be accomplished by a survey. The survey should determine which members are interested in having COG or an appropriate regional agency market their materials, their motivation for participating and their level of commitment.

A survey will also enable the COG to assess which particular recyclables its members want included in a regional program, the tonnages available (current and anticipated) and the existing or planned capabilities to process those materials.

Legal restrictions of local government participation in a regional marketing program should include a review of the procurement procedures for each member jurisdiction. This can also be accomplished through the survey.

Suggested timeline: Surveys should be completed within three months of decision to proceed.

Plan and Design Regional Marketing Program

After determining which materials will be included in the regional program and their respective tonnages, a plan for managing the regional marketing program must be developed. An initial short-term budget must be developed and funded through grants or pre-payment of dues by members to assure the COG or an appropriate regional agency has the necessary resources to plan the regional program. Once this occurs, the overall plan can be designed. This plan should set forth specific materials to be marketed and the schedule for including each material. The need for additional regional agency staff to operate the program must be determined. The regional agency should draft an operating budget and design appropriate funding mechanisms for approval by participating member governments. Each participating

member may be asked to contribute a set fee per capita, and/or a series of brokerage fees can be designed to finance the program.

Suggested timeline: Plan and budget approval three to six months after survey completion.

Implement the Program

After plans for the regional marketing program have begun, implementation can begin. There are three steps to implementation:

1. Hire Necessary Personnel
2. Issue RFPs to markets
3. Enter Contracts

Staff hired to operate the brokerage should have a clear understanding of marketing recyclables and brokerage skills and should work well with local recycling personnel and end users.

Regional agency staff, as directed by members and in association with legal counsel, will issue RFPs for specified amounts of recyclable materials to one or more end users per material, as necessary to meet processing needs of members and market capacities of buyers.

Once contracts are satisfactory to members, the regional agency will enter contracts with end users on behalf of its members. These contracts will determine revenues earned through the sale of material (fixed prices, floating prices, or floor/escalator prices), specify processing and contamination requirements and determine length of the agreement. Members will sign letters of intent with the regional agency to commit materials to the regional marketing program. These letters of intent should also specify a service fee rate.

Suggested timeline: Begin implementation three months after plan is completed.

Monitor the Program and Make Necessary Changes

Three are three primary tasks to assuring the program runs smoothly:

1. Arrange transportation to and payment from markets
2. Educate members
3. Continue to monitor members' needs

Regional agency personnel will be in constant contact with members to assure timely flow of materials from local recycling programs to end users. Upon notification of full loads from members, regional agency staff will contact buyers to arrange transportation, coordinate efficient transportation routes, invoice markets, and return revenue to members when appropriate.

Regional agency personnel will update participating members on such things as anticipated contract changes, processing requirements, and prices for materials.

At all times, regional agency staff and members must maintain an open dialogue to assure that the regional program is running smoothly and efficiently to best meet members' needs.

Suggested timeline: Ongoing throughout the life of the program.

Determine Members' Future Needs

Once the regional agency and participating jurisdictions feel secure in the operation of a regional marketing program served by the regional agency, an assessment of the regional agency assuming the role of broker/processor should be examined. Exploration of this option may not occur for several years after the inception of a regional marketing program operated by the regional agency as a broker.

Ongoing decisions will be made regarding adding or discontinuing materials in the regional program. Members will also have ongoing input into contract negotiation and renegotiation.

Suggested timeline: At the discretion of regional agency staff and members.

APPENDIX A

METROPOLITAN WASHINGTON COG
MARKET SURVEY RESULTS

WASTEPAPER

1. Southeast Paper
Silver Springs, MD

contact: Rob Barnwell
(301) 589-4002

capacity: an additional 50,000 tons/year of newsprint could be accepted

specifications: prefers loose newsprint, delivered to facility

current price: not available

contracts: available to certain sellers

2. Chesapeake Paperboard
Baltimore, MD

contact: Don Fitzpatric
(301) 752-1842

capacity: manufactures 250 tons/day of paperboard, currently near capacity

specifications: prefers loose newsprint, prefers OCC baled, also accepts mixed office paper

current price: accepts newsprint at no charge, OCC and office paper price not available

contracts: does not offer contracts

3. Stone Container
Hopewell, VA

contact: David Elliotte
(804) 541-9668

capacity: has adequate capacity, planning to expand

specifications: accepts baled OCC only, bale sizes may vary

current price: approximately $25/ton, FOB varies with seller

contracts: willing to offer contracts, but primarily utilize purchase orders

4. Weyerhaeuser
Richmond, VA

contact: Brian Heckel
(804) 232-2386

capacity: adequate capacity for high grade papers

specifications: loose or baled paper accepted, must be clean and dry

current price: range is $80 to $140 for high-grade material, FOB buyer's dock

contracts: available to certain sellers

GLASS CONTAINERS

1. Owens Brockway
   Toledo, OH

   contact: Nancy Hagemeyer
   (419) 247-2405

capacity:	adequate for all 3 colors at multiple glass plants
specifications:	color-separated, caps and rings removed, labels acceptable, no ceramics, drinking glass or plate glass
current price:	$50/ton curbside, additional $5/ton if > 50 miles from market, additional $5/ton if > 300 miles from market
contracts:	will offer letter of intent to purchase glass

FERROUS METALS

1. AMG Resources Corporation
   Pittsburgh, PA

   contact: Robert Chevalier
   (412) 777-7312

capacity:	adequate, especially if detinning plant is built in Baltimore
specifications:	prefers clean tin cans, loose or baled to a density of < 30 lbs/cubic foot.
current price:	$50/gross ton FOB the plant (Baltimore or Pittsburgh)
contracts:	prefers 5-10 years, willing to sign longer

2. Davis Industries
   Lorton, VA

   contact: Fred Barnett
   (703) 550-7402

capacity:	adequate capacity to accept all scrap metal from region
specifications:	capacitors removed from white goods; no grease, liquids, sealed containers
current price:	50¢/lb white goods; $1.00/lb ferrous scrap, prices are FOB buyers dock
contracts:	currently has contracts with Arlington and Fairfax counties

ALUMINUM CANS

1. Reynolds Aluminum Recycling Corporation
   Richmond, VA

   contact: W.W. (Bill) Richardson
   (301) 679-0100

capacity:	adequate capacity to handle all aluminum from region
specifications:	loose, flattened or shredded
current price:	not available
contracts:	signs contracts when siting a trailer and flattener/blower

PLASTICS

1. Alaric Incorporated
Tampa, FL

contact: Peter Blythe
(813) 628-4759

capacity: adequate capacity, has potential to expand facility if necessary

specifications: baled or granulated, clean, clear PET, green PET, color-mixed HDPE, HDPE base cups

current price: $40-$100/ton baled, $140-$500/ton granulated, FOB seller's dock, ≥15 tons/load

contracts: offer 1-2 year terms

2. Domtar Packaging, Inc.
Toronto, ONT

contact: Geoff Rathbone
(416) 232-8824

capacity: adequate capacity

specifications: accepts baled or granulated (3/8") clear Pet, green PET, color-mixed HDPE, natural HDPE, mixed PET and HDPE, and mixed plastic containers

current price: $40-$200/ton baled or granulated, FOB seller's dock, ≥ 15 tons/load

contracts: will enter 3 to 7 year contracts

3. M.A. Polymers
Peachtree City, GA

contact: Jackie Reed
(404) 487-7761

capacity: presently expanding, can accept 2 to 3 times their current capacity by the end of 1989, adequate capacity for region

specifications: high-density bales of mixed plastic, natural HDPE and color-mixed HDPE accepted,will accept clear, green and mixed PET by end of 1989.

current price: $60-$120/ton FOB seller's dock, 15 tons/load

contracts: presently not available

4. Pure Tech International
Pine Brook, NJ

contact: David Katz
(201) 227-1000

capacity: presently at capacity, planning expansion in January 1990

specifications: prefers baled PET, either color-mixed or separated, accepts baled clear HDPE, and will accept colored HDPE after expansion

current price: $100-$180/ton range, FOB seller's dock for full load

contracts: offers long-term contracts

PLASTICS - cont.

5. Shuman Plastics
Depew, NY

contact: Bruce Gilburne
(716) 685-2121

capacity: adequate capacity

specifications: accepts baled or granulated HDPE, PET, PVC, and other resins

current price: $100-200/ton range, granulated or baled, transportation arrangements vary

contracts: willing to negotiate contracts, usually one-year term

6. Wellman, Inc.
Johnsonville, SC

contact: Robert Dastou
(803) 386-2011

capacity: presently buying approximately 110 million tons/year, could double easily

specifications: high density 3' x 4' x 5' bales of clear, green and mixed PET

current price: $0 to $180/ton FOB seller's dock for ≥ 15 ton loads

contracts: will enter long-term contracts with a floor price