

# Building a Strategy for Marketing Minnesota's Secondary Materials



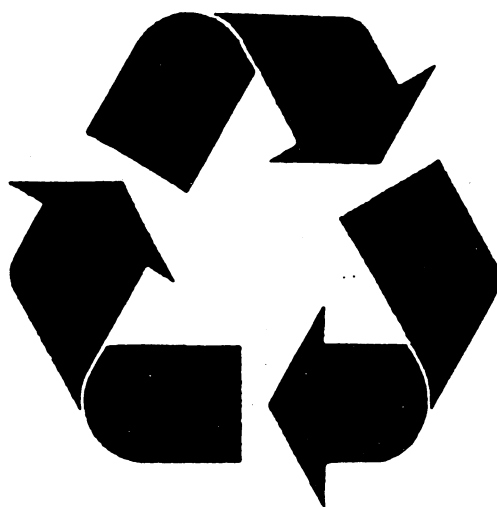
Volume II: A Blueprint for Action

Center for Urban and Regional Affairs  
in cooperation with The Minnesota Project

Building a Strategy for Marketing  
Minnesota's Secondary Materials

Volume II: A Blueprint for Action

by Thomas R. Peek



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## FOREWORD

In December of 1989, a select group of public and private sector people with knowledge of, and interest in, marketing secondary materials met for a two-day workshop at the Hubert H. Humphrey Center in Minneapolis, Minnesota. The ultimate goal of these discussions was "the framing of an overall strategy which will pinpoint four to six key actions to expand secondary materials markets," drawing on the wide range of interests and perspectives held by the participants.

The workshop was part of a project conducted by the University of Minnesota's Center for Urban and Regional Affairs (CURA) in cooperation with The Minnesota Project, funded by a grant from the Northwest Area Foundation. Project organizers designed the effort to respond to an immediate need for a broad-based, innovative discussion of market strategies at a time when Minnesota and other midwestern states were facing a significant change in the market environment for recycled materials. In fact, the volume of some materials had grown so dramatically that much of this resource was not reaching its potential markets. From the workshop invitation:

It is becoming apparent that none of the sectors involved in solid waste management and secondary materials markets can solve the problem on their own. Each sector has some established legal, political, and financial stake in the system, but no sector has by itself the capacity to effect significant change. It will require not only a concerted effort, but also an unprecedented level of cooperation and open-mindedness among all parties to identify both the real problems in market development and several key courses of action to be pursued in the region over the next five years and beyond.

So on December 13 and 14, 1989, thirty-five people from Minnesota and around the country gathered to talk about the current situation and to begin the formulation of a strategic "blueprint for action" to market the state's secondary materials. About a third of the participants came from industry, another third from government, with the remainder bringing perspectives from the academic community and the nonprofit sector. Included in this group were some of the key decision-makers in industry and state government—people with responsibility and leverage in the economic and governmental spheres. While the sessions focused on Minnesota, out-of-state participants brought perspectives from Arkansas, California, Florida, Iowa, Ohio, Washington, Wisconsin, and Alberta, Canada. (See Appendix 1 for a complete list of the participants.)

In order to take advantage of the impressive mix of people, most of the workshop was conducted in small, informal sessions, organized around three major materials areas—paper, plastics, and glass and metals. Each of these three groups approached their task in somewhat different ways and, as a result, came up with varying kinds of observations and recommendations. The small groups went well beyond identifying “four to six key actions to expand secondary materials markets.” Together, their work represents a significant assessment of the current impediments inhibiting market utilization of Minnesota’s secondary materials and an innovative, extensive, and potent “Blueprint for Action.”

Several large group sessions were also held to broadly review the current situation (stimulated by the presentation of a status report outlining the market situation in Minnesota), to report back and integrate the discussions of the small-group sessions, and to sum up the entire process at the end of the two-day workshop. (See Appendix 2 for the workshop agenda.)

The results of the workshop are summarized in this report, following a summary of the status report on Minnesota’s secondary materials markets. It is hoped that this report, “A Blueprint for Action,” will be useful to all those (in the public and private sectors) interested in developing strategies for marketing Minnesota’s secondary materials. There is no question that given the particular individuals who participated in the workshop and the significant results of their discussions, the process of strategy-building is well underway.

The author wishes to acknowledge conference facilitators, Susan Schmidt of the Minnesota Project, and John Gilkeson of CURA, for their assistance in summarizing their small group sessions.

## EXECUTIVE SUMMARY: A BLUEPRINT FOR ACTION

The results of the December 1989 Secondary Materials Market Development Workshop are summarized below. While there was not unanimous agreement on every detail of the group's report, major agreement existed on the following key observations and proposals. The overall conclusions specifically reflect areas of common agreement which emerged either in the large group sessions or among the small groups.

### OVERALL CONCLUSIONS

1. The use of secondary materials (particularly waste paper, plastics, glass, and metals) is inhibited by a number of market impediments, the *most important* of which are:
  - Insufficient quality of materials—due to a lack of materials and packaging standards, inadequate materials separation, and the presence of contaminants in the waste stream.
  - Diffusion of supply—caused by distances from markets and myriad brokers, especially in rural areas, and the wide variety of types of materials.
  - Higher costs of secondary materials relative to their virgin counterparts—caused by insufficient demand; costs of collection, processing, and transportation; and “unfair competition” as a result of subsidies that keep the price of virgin materials “artificially” low.
2. Five major actions should be taken to overcome these impediments:
  - Establish cooperative collection, transportation, and marketing arrangements—to coordinate collection, transportation, processing, and brokering; reduce the costs of these activities; and enhance the quantity and quality of the resource. These might include any of several possible types, including multi-county market cooperatives, material recycling facilities (MRFs), and multi-state cooperatives.
  - Modify existing subsidies that make the price of virgin materials artificially low—through federal and/or state government action to “level the playing field” and make secondary materials competitive with their virgin counterparts. These include the subsidies on wood and petroleum-based products that affect paper and plastics prices.



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- Improve materials and packaging standards for products made from paper, plastics, glass, and metals—to enhance product design and recyclability. While the public and private sectors should be involved in making these improvements, standards and regulations must be enforceable by government.
  - Impose packaging/container bans, taxes, deposits, or fees—to enhance the recyclability of packages and containers, create incentives for recovery of these secondary materials, enhance the quality of the materials that are recovered, and reduce the amount of material entering the waste stream.
  - Subsidize uneconomical aspects of collection, processing and transportation—to assist in making secondary materials competitive with their virgin counterparts through public research and development, tax breaks, grants, and other subsidies.
3. The public and private sectors each have legitimate and important roles to play in marketing secondary materials, and public/private cooperation in these efforts is essential. Government intervention in the market is necessary—even if the use of secondary materials is ultimately not profitable—in order to utilize these important resources and achieve environmental and landfill abatement goals. The degree to which public intervention is required will depend on the particular material.
  4. The external costs of waste disposal—costs not reflected in the prices of packaging and other products made from virgin materials—require public strategies; the avoided costs of disposal justify public expenditures for recycling and materials marketing. While recycling may be expensive, especially in the near-term, secondary materials are an important resource and their price must be set with an eye toward total systems costs, including the costs of virgin resource development and waste disposal.
  5. While states can do much to overcome the market barriers for these materials, some federal action is required to set standards for materials and packaging, establish labeling requirements for these, and modify existing public subsidies of virgin materials in order to create fair market competition for recyclables.

### A STRATEGY FOR MARKETING SECONDARY PAPER

1. There are several grades of waste paper—newspaper, corrugated, office/computer, and others (such as magazines)—which have clear market potential. Even so, there are four major impediments inhibiting the full market utilization of these materials: excess quantity of these materials, given current demand (at least in the short-term); diffusion of supply caused by distances from markets and the variety of secondary paper types; higher costs of secondary paper relative to virgin fibers; and lack of, or inconsistent, quality of these materials.
2. Twelve key actions should be taken to overcome the impediments for waste papers *with market potential* (to be undertaken with an awareness of ongoing market conditions):
  - Create regional marketing and transportation cooperatives.

- Identify and support smaller waste paper users in order to increase local demand and processing capacity.
  - Increase industry's capacity to use these materials by providing tax credits and other incentives for industry expansion, especially in the short-term.
  - Expand recycled paper procurement programs in government and the private sector.
  - Impose packaging bans, taxes, or surcharges to enhance recyclability.
  - Establish recycled paper content requirements, especially for newspapers.
  - Establish standards for products made from recycled waste paper.
  - Conduct educational and promotional efforts.
  - Label packaging and other paper products to indicate recycled content and "environmental soundness."
  - Define the appropriate roles of government and industry in waste paper marketing; determine who pays the net cost of recycling and designate who owns the waste paper.
  - Develop proposals for both regulatory and incentive measures to get industry to change its practices.
3. Five additional actions should be taken to overcome the impediments for mixed paper—a waste paper *with limited market potential*:
- Impose packaging bans, taxes, or fees.
  - Conduct consumer education.
  - Improve paper processing technology.
  - Subsidize development of new products and end-uses for mixed paper.
  - After ensuring highest and best use, compost or burn mixed paper as a last resort.

### A STRATEGY FOR MARKETING SECONDARY PLASTICS

1. The most important impediments inhibiting the utilization of secondary plastics include an inadequate supply and unreliable flow of plastics; diffusion of materials caused by distances from markets and myriad brokers; variations in quality; and the higher cost of secondary plastics relative to virgin resins. In addition, there is a lag in the application of technology and the development of infrastructure for the collection and remanufacture of these materials; and a lag in investment for new product development from secondary plastics. There is also a need for a "common language" about recycling and secondary plastics to avoid misunderstandings in government and industry.

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2. Five key actions should be taken to overcome *quality* problems:
  - Standardize the plastics industry through materials and packaging standards and fees on packaging with less recyclable content.
  - Improve sorting of secondary plastics.
  - Create new applications for plastics of varying quality.
  - Foster more effective supplier/user "deal-making."
  - Eliminate the use of so-called "biodegradable" plastics (which do not degrade under normal landfill circumstances, and which complicate the remanufacture of mixed secondary plastics).
3. Three key actions should be taken to overcome *the diffusion of supply* caused by distances to markets and myriad brokers:
  - Establish materials recycling facilities (MRFs).
  - Establish other cooperative marketing arrangements.
  - Create a commodities market for secondary plastics.
4. Four key actions should be taken to overcome the *relatively higher costs of doing business* with secondary plastics:
  - Enhance the price of secondary plastics through government action.
  - Remove existing public subsidies on virgin plastics.
  - Shift public and private research and development priorities to acknowledge the increasing importance of secondary plastics.
  - Create greater demand for secondary plastics, particularly through new product development.
5. Two types of action should be taken to overcome *inadequacies in the recycling/ remanufacturing infrastructure*:
  - Threaten regulation and bad publicity as incentives to improve infrastructure.
  - Provide public subsidies, positive publicity, and other rewards as incentives to improve infrastructure.

## A STRATEGY FOR MARKETING SECONDARY GLASS AND METALS

1. Secondary glass and metals are more fully utilized by their markets than some other recyclables because they have markets which are fairly strong, and they can almost always be recycled into new products. Even so, there are three major impediments that, if overcome, would increase utilization of these materials. These include insufficient quality of materials; insufficient demand for products containing secondary glass and metals; and the higher price of secondary glass and metals relative to their virgin counterparts because of transportation and other costs.

2. Twelve actions should be taken to *enhance the quality* of recycled glass and metals (several of which would, as a by-product, also increase the quantity of materials):
  - Conduct education programs (with emphasis on materials separation).
  - Set higher recycling goals for glass and metals (because they are easier to collect, recycle, and market than other secondary materials).
  - Improve glass and metals collection.
  - Require source separation through mandates, regulations, and incentive-based ordinances.
  - Require deposits on glass and metal containers.
  - Establish price signals to enhance source separation (through imposition of fees on packaging and other products, and increased tipping fees).
  - Base garbage collection fees on volume or weight (providing waste generators with an incentive for source separation).
  - Evaluate the relationships between economic incentives and materials recovery rates through cooperative studies by government and the private sector.
  - Improve mechanical separation technology.
  - Improve materials and packaging standards for glass and metal products.
  - Substitute lacquer or enamel for tin plate in metal (eliminating significant capital and technological barriers to recycling metal cans).
  - Improve metals processing (by increasing the quantities of, and ways in which certain grades of metals are used at the mills).
3. Five actions should be taken to *stimulate demand for products* containing secondary glass and metals:
  - Conduct education programs to promote the use of products containing secondary glass and metals.
  - Improve private sector marketing of products containing secondary glass and metals.
  - Improve materials and packaging standards for glass and metal products (to create industry confidence and thereby stimulate demand).
  - Establish price/cost incentives such as packaging and other product fees.
  - Establish public and private procurement programs.
4. Four actions should be taken to *reduce transportation costs*:
  - Subsidize transportation costs when distances make transportation of recycled glass and metals cost-prohibitive.
  - Set trucking prices to recover glass and metals from low-generation-rate areas.

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- Establish transfer centers for consolidating small loads of secondary glass and metals, especially in rural areas.
- Establish transportation and marketing brokerages, run individually or jointly by the government, private sector, or nonprofit groups.

## I. SUMMARY OF THE MINNESOTA MARKET STATUS REPORT

The following is a summary of a larger report, *Building a Strategy for Marketing Minnesota's Secondary Materials, Volume I: Market Status Report*, written by Thomas R. Peek and published by CURA in December 1989. The status report was prepared for use at the Secondary Materials Market Development Workshop, December 13 and 14, 1989. This summary contains the key findings and conclusions of the report. (Copies of the full report can be obtained from CURA, 330 Hubert H. Humphrey Center, 301 19th Avenue S., Minneapolis, Minnesota 55455, 612/625-1551.)

### WHY IS MINNESOTA CONCERNED ABOUT MARKETING ITS SECONDARY MATERIALS?

Minnesota, like other states in the Midwest and the nation, is keenly interested in expanding markets for secondary materials for a variety of reasons, including: a new environmental ethic; concern about limited natural resources; and a solid waste disposal crisis brought on by increasing amounts of garbage, public opposition to on-land disposal, increasing government regulation of landfills, diversion of garbage to non-land alternatives, and public opposition to incineration.

### WHAT IS RECYCLING?

After secondary materials are diverted from the waste stream, they are recycled in a variety of ways, depending on the material. In most cases, recycling involves the reprocessing of materials to prepare them for remanufacture into new products. These products may be similar to the original discards, such as new beverage containers made from old ones, or entirely different products, such as building materials made from old plastic milk bottles.

In other cases, recycling involves the reuse of discarded materials in the same or similar form, without significant reprocessing or remanufacturing, such as the reuse of textiles either as used clothing or rags. Sometimes secondary materials are reused with minimal reprocessing, such as when old newsprint is shredded and packaged for re-use as animal bedding.

While composting of yard wastes and other organic materials is often considered a type of recycling, it rarely results in new, second-generation products (such as potting soil and soil conditioners). More often it is utilized merely as a more environmentally sound disposal method than landfilling or incineration.

It is important to distinguish between post-consumer materials discarded by households, offices, and other institutions, and commercial/industrial wastes generated by commercial and industrial operations. Post-consumer materials are heterogeneous wastes of highly variable quality, usually diverted after their incorporation into the mixed municipal solid waste stream. By contrast, commercial/industrial wastes are often high-quality, homogeneous materials diverted from the waste stream at the commercial or industrial site, rather than through the municipal solid waste system.

Another important distinction is between recycling and "resource recovery"—the one-time diversion of materials from the waste stream, usually through incineration to produce energy. While the material is being "recovered" as electricity or heat, it is being destroyed rather than recycled into reusable products.

### **WHAT ARE SECONDARY MATERIALS?**

Secondary materials are the old papers, cans, bottles, appliances, tires, and a wide variety of other discards diverted from the waste stream for recycling. The major materials for which markets are sought are waste paper, plastics, glass, and metals. The full range of secondary materials are listed and defined in Appendix 3.

### **WHAT IS MARKET DEVELOPMENT?**

For the purposes of this report, market development is defined as the public and private activities employed to overcome whatever impediments prevent full utilization of secondary materials diverted from the waste stream. Some market development actions are designed to enhance the utilization of secondary materials that have market potential but are not reaching those markets. Other actions are designed to create new markets for secondary materials with limited market potential. Some actions may be designed to increase the capacity to utilize secondary materials, while others may be designed to stimulate demand for products made of secondary materials. Market development actions may also be geared toward overcoming prejudices about the quality of products made from secondary materials.

The market development activities identified in this report are generally designed to influence local, state, and Midwest regional markets, but some of these actions may affect national markets as well. Although local, state, and regional markets may be part of a national market situation—and therefore affected by national market circumstances—these "close-to-home" market development activities can positively influence secondary materials markets that are largely determined by national circumstances.

### **WHAT DOES THE WASTE STREAM LOOK LIKE? HOW MUCH IS BEING RECYCLED?**

The single largest component of the U.S. waste stream is waste paper, followed by yard wastes. Together they make up almost 60 percent of the gross discards in the municipal waste stream. Metal, glass, and plastics together compose nearly a quarter of discarded solid waste. Only three secondary materials have substantial recycling rates—waste paper at about 23 percent, aluminum at 25 percent, and glass at 8.5 percent recycled. Overall, about 11 percent of U.S. secondary materials are recycled.

Minnesotans throw away 4 million tons of waste a year. Half of this, or about two and one-half pounds per person per day, is residential waste. Waste generation is expected to increase 22 percent by the year 2000. The single largest component of the Minnesota waste stream is paper, followed by food wastes and yard wastes. About 11 percent of solid wastes are recycled in the Twin Cities, only 4 percent in greater Minnesota. (See Appendix 4 for a comparison of the Minnesota and U.S. waste streams.)

### WHAT IS THE CURRENT MARKET SITUATION FOR MINNESOTA SECONDARY MATERIALS?

Existing market analyses present a generally optimistic picture of the market *potential* for Minnesota's secondary materials, especially in the long term. This is true for most of Minnesota's secondary materials, including waste paper, plastics, glass, aluminum, ferrous metals, and textiles. For these materials, markets exist, demand is strong or moderate, the existing or anticipated capacity to reprocess and remanufacture them exceeds their current supply, and new products can be (and are being) made out of these old materials. However, others, including certain plastics other than PET (polyethylene terephthalate) and HDPE (high density polyethylene), used oil, yard wastes, spent batteries, and discarded tires, are plagued with low demand and prices or are not easily made into new end-use products.

In addition to this overall picture, several key conclusions about each of the major secondary materials can be gleaned from existing market analyses:

- Over time the demand for waste paper and the capacity to process it should meet anticipated increases in supply, even though there currently is (and may periodically be), a glut of old newspapers. However, waste paper prices are volatile, so the economics of collection and processing will vary considerably over time.
- Even though the amount of plastic trash is growing, the demand for this material, particularly for PET and HDPE, and the capacity to process it, exceed the current supply. Prices for PET and HDPE scrap reflect the costs of virgin resin, and so rise and fall accordingly. The main problem is that these milk and soda pop containers are bulky and lightweight, so the costs to collect, process, store, and ship these materials often makes them uncompetitive with their virgin materials counterparts.
- The demand for glass, particularly color-sorted glass, is strong, and the capacity to process it far exceeds the current supply. More needs to be collected.
- The demand for recycled aluminum is strong, and the demand for scrap beverage containers exceeds the supply. Unfortunately, aluminum scrap prices rise and fall rapidly, creating instability in the market.
- The demand for ferrous metals, especially tin cans, is strong. The capacity to process ferrous exceeds current supply. This stable demand should continue into the future.
- Almost all Minnesota tires—millions of them—are being stockpiled on land, and there is essentially no demand for them. While an increasing number of



tires may eventually be burned as fuel, at the current time tire collectors get no remuneration or actually pay for disposal.

- The demand for waste oil is declining—due to state and federal regulations—and many collectors have to give it away or pay for its removal.
- Building materials are reused only when on-land disposal is either costly or difficult because of possible ground water contamination or limited space.
- While potential markets exist for yard wastes, little of the material is being recycled or composted, despite some beginning efforts to utilize this high-volume waste.
- After the demand for spent lead-acid batteries dropped in the mid-1980s—due to a decline in the price for lead and new environmental regulations—the state of Minnesota took actions to outlaw landfill disposal of these batteries and to require retailers to accept and recycle them. The effects of those actions on demand, capacity, and prices are unknown at this time.
- The supply of textiles for reuse or recycling exceeds demand. The prices paid for them now is less than in the past, despite stable demand.

### WHAT ARE THE IMPEDIMENTS TO FULL MARKET UTILIZATION OF MINNESOTA'S SECONDARY MATERIALS?

The existing market analyses present a generally optimistic picture of the market *potential* for most of Minnesota's secondary materials—waste paper, plastics, glass, aluminum, ferrous metals, and textiles. Even so, the potential markets for these materials are apparently underutilized for a variety of reasons, including (depending on the material):

- inherent price instability,
- higher prices for secondary materials than for their virgin counterparts,
- an unreliable flow or insufficient quantity of materials,
- inadequate quality of materials.

Other secondary materials, according to these analyses, have limited market potential—certain plastics (those other than PET and HDPE), used oil, spent batteries, yard wastes, and discarded tires. Not only do they sometimes suffer from the impediments affecting Minnesota's other secondary materials (those *with* markets), but they are (depending on the material):

- subject to regulations which limit their market potential,
- not easily made into end-use products,
- generated in such volumes that it is difficult to collect and reuse the materials.

There is an additional market impediment for materials of all types, regardless of market potential:

- prejudice against products made from secondary or "waste" materials.

### WHO'S RESPONSIBLE FOR BUILDING MARKETS FOR MINNESOTA'S SECONDARY MATERIALS?

It is not enough to simply assume that existing market forces, left unto themselves, will take care of the growing volume of secondary materials—they haven't and they won't. While the "free market" has responded to the increased demand for, and volume of, secondary materials, there are some market "imperfections" and considerable market "lag" that require public sector involvement. In addition, the motivation for enhancing the marketability of Minnesota's secondary materials is not strictly—or even primarily—economic. In fact, fundamentally it derives from very important public needs and concerns in response to a growing solid waste crisis, concern about limited natural resources, and public opposition to other disposal methods.

The responsibility for building market strategies for Minnesota's secondary materials must be shared among industry, state government, local jurisdictions, non-profit entities, and research and educational institutions. Vigorous discussion among all these parties is necessary to formulate realistic strategies, and partnerships among them will be at the heart of successful strategy-building.

### WHAT CAN BE DONE TO AFFECT THE SITUATION?

The report identifies eight *types of action* and thirty-one *specific options* which can be employed to overcome the impediments to marketing Minnesota's secondary materials. Applied in various ways to various materials, these include:

#### Actions to Increase and Stabilize Price and Demand

- Public and private procurement—applies to end-use products made from all Minnesota secondary materials, but especially waste paper, yard wastes, and remanufactured tires.
- Stockpiling collected materials—particularly applies to newspapers, plastics, and aluminum.
- Direct marketing of materials—most practical with high-demand, but price-volatile, materials, particularly newspapers, glass, and metal beverage containers.
- Public subsidies and price supports—particularly applies to plastics, yard wastes, tires, waste oil, and batteries.
- Modification or elimination of public subsidies for virgin materials—applies particularly to paper and plastics.
- Imposition of packaging fees—applies to packaging made from all materials, but especially from paper, plastics, metals, and glass.

- Development of new products and new markets—applies to all Minnesota secondary materials.

#### **Actions to Increase the Reliability and Quantity of the Materials Flow**

- Promotion of recycling and use of secondary materials—applies to all Minnesota secondary materials.
- Establishment of recycling goals—applies to all Minnesota secondary materials.
- Placing deposits on containers—applies to beverage and other common containers made of glass, metals, and plastics.
- Improved processing of materials—particularly applies to plastics.
- Stockpiling collected materials—particularly applies to newspapers, aluminum, and plastics.
- Collective marketing of materials—applies to all Minnesota secondary materials, but especially waste paper and plastics.

#### **Actions to Enhance the Quality of Materials**

- Improved source separation of materials prior to collection—applies to all Minnesota secondary materials, but especially waste paper, glass, and plastics.
- Improved separation of materials after collection—particularly applies to waste paper, glass, and plastics.
- Regulation of packaging design—applies to packaging made from all materials, but especially from paper, plastics, metals, and glass.
- Improved processing of materials—applies to all Minnesota secondary materials.
- Materials content labeling—primarily applicable to plastics.
- Secondary materials standards—primarily applicable to plastics, but also waste paper.

#### **Actions to Improve Collection, Processing, and Transportation Systems**

- Investigation of systems improvements—particularly applicable to waste paper, plastics, and glass.
- Application of new technology—particularly applicable to waste paper and plastics.
- Improved management—particularly applicable to waste paper and plastics.
- Public subsidies and/or tax incentives to promote private systems improvements—particularly applicable to plastics and yard wastes.

### **Actions to Foster Market Development**

- Market surveys—applicable to all Minnesota secondary materials, but especially yard wastes, used oil, spent batteries, and tires.
- Market promotion and education—applicable to all Minnesota secondary materials, but especially waste paper, plastics, and yard wastes.

### **Actions to Develop New Products**

- Research and development—applicable to all Minnesota secondary materials, but especially used tires and yard wastes.

### **Actions to Foster Reuse of Undesirable Materials**

- Research and development—applicable to used tires, waste oil, spent batteries, and yard wastes.
- Subsidized reuse—applicable to used tires, waste oil, spent batteries, and yard wastes.

### **Actions to Overcome Prejudices about the Quality of New Products Made from Secondary Materials**

- Standards for end-use products made from secondary materials—applicable to products made from all Minnesota secondary materials, particularly products from waste paper.
- End-use product testing—applicable to products made from all Minnesota secondary materials, particularly waste paper and used tires (remanufactured tires).
- Secondary materials promotion and education—applicable to all Minnesota secondary materials, but especially waste paper, plastics, and yard wastes.

### **WHAT IS THE STATE OF MINNESOTA DOING TO IMPROVE THE SITUATION?**

The state of Minnesota has taken a number of actions to enhance the utilization of secondary materials. Among other things, the state has established a waste education program, issued a recycling directory, created the Office of Waste Management (with market development responsibilities), and established loan and grant programs for projects that utilize secondary materials or develop waste management alternatives (including recycling). The state also requires procurement of secondary materials by state agencies and other public entities, and is planning to conduct several studies with implications for marketing secondary materials. The state has also set 1993 recycling goals for Minnesota—recycling rates of 40 percent for state agencies, 25 percent for counties in greater Minnesota, and 35 percent for Twin Cities metropolitan area counties.

Many of these activities are mandated or enhanced by the 1989 SCORE legislation, whose provisions are outlined in appendices 5 and 6.

## NOW WHAT?

Several key process issues should be addressed when beginning to build a strategy for marketing these materials, including the following:

- What kinds of processes should be initiated to foster *cooperative* strategy building?
- What kinds of current and future information will be needed to build these strategies?
- How can others from the Midwest region become involved in these strategy building activities?
- What key short-term actions would have an immediate effect on the situation?
- What longer-term actions should be taken to build upon those early activities?
- What types of evaluation should be used to determine the effectiveness of the strategy?
- What long-term actions—*no matter how challenging*—will be required to market Minnesota's secondary materials and solve its solid waste crisis?

These issues were among those discussed by participants at the secondary materials workshop in December. The responses to these questions are reflected in the remaining sections of this document.

## II. THE BROADER CONTEXT

### INTRODUCTION TO THE WORKSHOP

Tom Anding, Associate Director of CURA, opened the December '89 workshop by welcoming the group. He noted, with historical perspective, the important task of designing strategies for marketing Minnesota's secondary materials:

We certainly are on a different square than we were twenty, twenty-five years ago. Part of the reason we're here today to talk about this, is not only because we've had some continued failure, but because we've had some success. And, unfortunately, part of that success is starting to pile up around us. We're here to see whether or not there aren't some control points, some things that both the public and private sectors can do to ameliorate that.

Susan Schmidt, Associate Director of The Minnesota Project, elaborated on the timely need for the workshop discussions, and the importance of drawing on the wide range of perspectives reflected in the group:

There are different opinions about what market development is. There are different opinions about the degree of the problem of markets for secondary materials. I personally think that some of the confusion and different opinions often lead to inaction in market development and a certain sense that somebody else is taking care of the problem. The outcome we hope to see (from these meetings) is a better sense of the problem and the degree of the problem of market development; a better sense of what the most important impediments are; a better sense of what actions we can take to overcome those problems; and who are the responsible parties.

These remarks were followed by three presentations, each providing information on the broader context in which the workshop discussions were occurring.

### **ROBERTSON: THE STATE IS READY TO ACT ON MARKET DEVELOPMENT**

Michael Robertson, Director of the Minnesota Office of Waste Management, told the group that Minnesota was now at the beginning of a "major acceleration" of state involvement in market development, due to passage of the 1989 SCORE legislation (based on recommendations of the Governor's Select Committee on Recycling and the Environment). He noted that we are in "a new phase" of looking at waste, and that

the legislation recognizes the need for market development and the state's responsibility to play a major role in that effort.

He said that about ten years ago, waste was an "out of sight, out of mind" issue, but when the state was forced by environmental problems to examine disposal issues, "we quickly concluded that there is no 'black box' that can solve all those problems." Robertson, referring to waste as "an economic resource," said the state is now focusing on waste as a "resource conservation issue," looking at the question, "how can we turn waste into new products?"

He said this will be the focus of the Office of Waste Management's market development activities, which will receive about \$2.4 million of the money raised by a 6 percent garbage collection and disposal tax imposed by the SCORE legislation. About \$2 million of this money will be available for market development programs, after staffing requirements are met. (Most of the remaining \$27.6 million revenue raised by the tax will be used statewide, for recycling programs administered by the eighty-seven counties.)

Despite the state's commitment to market development, many issues regarding its role have yet to be resolved. Robertson:

The really fascinating thing about all this is the mix of public and private sector involvement. We have state government. We're trying to figure out what the role of the federal government will be. We have, in our state, counties being the main local units of government responsible for implementation. We have the involvement at various levels on the part of cities. We have the private sector trying to develop and make money in new businesses. How do we put all of this together in a way that makes people happy and that gets the goal accomplished?

Robertson said that the Office of Waste Management will be appointing an eighteen-member Market Development Coordinating Council to assist in working out some of these issues and to evaluate and coordinate the state's market development efforts. He said he will be seeking advice from this group on design of the strategy and on how to spend the \$2 million program dollars. He also plans to appoint additional "resource groups"—on paper, plastics, and other topics—to advise his office and the Coordinating Council on waste issues.

### **MCGOUGH: MET COUNCIL TO INCREASE MARKET DEVELOPMENT EFFORTS**

John McGough, Senior Planner at the Metropolitan Council of the Twin Cities Area, told the group that the Council's market development efforts are part of an overall waste management program; a program for developing county plans for "environmentally sound, comprehensive waste management," including recycling. McGough noted that while the Twin Cities area will meet the current 15 percent recycling goal set in 1985, that is not a sufficient level of recycling to meet necessary landfill abatement goals, because regional waste generation is higher than was expected.

In order to solve that problem, and meet the 1993 recycling rate required by SCORE—35 percent for the metropolitan area—the Council is going to increase the market development aspects of its solid waste program. The Council plans to "redirect"

for market development about \$3.5 million from the anticipated \$10 million (Landfill Abatement Fund money) raised through tipping fees during the current biennium.

McGough said that the Council is trying to use its grant money as a "catalyst" for obtaining better information on market development, getting demonstration programs underway, and to generate interest in developing markets, rather than in implementing marketing programs, per se. The Council has already contracted for a study by Franklin Associates to determine the composition of the region's waste stream and identify potential markets for its secondary materials. That study, expected in April 1990, will be a "major piece of research" and the basis for developing Council waste management programs, including market development activities.

He said the Council has also provided a grant to the Greater St. Paul Chamber of Commerce to assist them in acquainting business in the metropolitan area with recycling and to explore business/industry recycling strategies and educational programs. That project has also tried to interest the financial community in funding programs and developing products. An outgrowth of this effort is a market development conference to be held in March 1990.

McGough said that one idea that might merit some Council funding is the development of a cooperative marketing strategy for the Twin Cities, perhaps setting up a private, nonprofit entity to assist in this. The cooperative effort, which could be modeled after work done in New Hampshire, was an idea supported by a Council committee on solid waste issues, comprising metropolitan area county commissioners.

These market development efforts represent a new direction for the Metropolitan Council, and McGough acknowledged that the Council's previous marketing efforts have been limited:

The policy-makers really didn't believe market development was a problem. I can recall one of our leaders saying "worry about collection, the markets will take care of themselves..." I think we found out it's not quite that simple.

McGough expressed concern about the region's ability to utilize the amount of secondary materials that are anticipated:

We really have to know more about what is going to happen when we have 35 percent programming on line and, say, we have 60 percent participation by residents, and God-knows what kind of commercial/industrial material. What does that mean in terms of supply of recyclables? Then we're talking about a much more substantial market development effort.

Like Robertson at the Office of Waste Management, McGough wondered about what the proper governmental role should be in developing markets for secondary materials:

I think the critical issue in this next phase of market development is, what is our role in all this? Who owns these materials? What is the role of government? Are we moving into controlling this market? We're getting a real different policy perspective from some people who are saying "get in, grab it, be a player," and others who are saying "this is not our role,



we've got to stay out of it." We're wrestling with that very issue in the policy plan. We're going to have to come down on which way we think this system should be developed in the region—should it be privately controlled and dominated, as we tend to think it should be, or what role should government play in getting these requirements out? We haven't (made a decision) so far.

**PEEK: MARKETING RECYCLABLES EVEN MORE IMPORTANT IN THE FUTURE**

Tom Peek, writer/consultant, reviewed the highlights of his status report on markets for Minnesota's secondary materials. He opened his remarks by telling the audience that their workshop discussions on marketing strategy will be increasingly important as Minnesota and the U.S., like other industrialized societies, increase their reliance on recycled materials as the cost and availability of natural resources change. He said effective recycling programs created the need for better utilization of these materials, a problem that is only going to get worse as obsolete attitudes about recycling are succeeded by responsible resource and solid waste management practices:

If recycling is to be successful, it must be better integrated into our way of life, both at home and in business. Similarly, the use of secondary materials must become fully integrated into our economic system, particularly into the manufacturing sector. So the marketing concern we have to deal with today is more than just a short-term problem.

Peek then reviewed the status report, details of which are outlined in Chapter 1 of this document.

Following this discussion, participants broke up into three small groups to discuss papers, plastics, and glass and metals. The results of these small group discussions follow.

### III. A STRATEGY FOR MARKETING SECONDARY PAPER

The waste paper small group consisted of twelve people, including two waste paper end-users, a newsprint buyer, two consultants, an economist, a representative of a nonprofit research and advocacy organization, and five government officials (including the state's chief procurement officer and the Chair of the Legislative Commission on Minnesota Resources). The participants were:

- Paul Anderson, President, Paul's Insulation, Vergas, Minnesota
- Richard Diercks, Assistant Commissioner, Minnesota Department of Administration, St. Paul, Minnesota
- Del Edwards, President, Waste Alternatives, Inc., Burnsville, Minnesota
- Preston Home-Brine, Washington Department of Trade and Economic Development, Market Development Committee staff, Seattle, Washington; and board member, Washington State Recycling Association
- James Howard, Economist, Forest Products Laboratory, U.S. Forest Service, Madison, Wisconsin
- Phyllis Kahn, State Representative and Chair of the Legislative Commission on Minnesota Resources, Minnesota State Legislature, St. Paul, Minnesota
- John McGough, Senior Planner, Solid Waste, Metropolitan Council of the Twin Cities, St. Paul, Minnesota
- Cathy Moeger, Solid Waste Project Leader, Minnesota Pollution Control Agency, St. Paul, Minnesota; and board member, National Recycling Coalition
- Ian Murray, Business Consultant, Edmonton, Alberta
- Dean Myhran, Assistant to the Business Manager, Cowles Media Company, Minneapolis, Minnesota
- Thomas Troskey, Paper Stock Manager, Waldorf Paper Corporation, St. Paul, Minnesota
- Susan Schmidt, *Facilitator*, Associate Director, The Minnesota Project, Minneapolis, Minnesota; board member, National Recycling Coalition, and board member, Recycling Association of Minnesota

## WHAT ARE THE IMPEDIMENTS TO MARKET UTILIZATION OF WASTE PAPER?

The group noted that there are grades of waste paper—newspaper, corrugated, office/computer, and others (e.g. magazines)—which have market potential. Even so, according to the group, there are four major impediments inhibiting the full market utilization of these materials. These include:

- Excess quantity of these materials, given current demand (at least in the short-term)—because of insufficient capacity to absorb the materials in the short-term, which creates cyclical volatility in prices and demand. Insufficient quantity can also be an impediment for certain grades at various times.
- Diffusion of supply—primarily due to distances from markets but also due to the variety of secondary paper types.
- The higher costs of secondary papers relative to their virgin counterparts—given the costs of collecting, processing, transporting, and marketing of the secondary resource; and the tax and other subsidies which may accrue to the virgin fiber industries.
- Lack of or inconsistent quality—due to inadequate grade-based separation and the presence of contaminants in the streams of waste and recyclables.

## WHAT CAN BE DONE TO OVERCOME THESE IMPEDIMENTS?

The group identified a number of actions to overcome these key impediments to full market utilization, and grouped these actions in two categories—those for waste paper with *market potential* (e.g. news, corrugated and office) and those for waste paper with *limited market potential* (e.g. mixed waste paper). These actions were not prioritized. The group felt that it would be important to undertake these actions in conjunction with close monitoring of waste paper market dynamics and paper industry efforts to increase secondary fiber use, especially over the next year or two.

The waste paper group identified twelve specific actions to overcome the impediments for waste paper with market potential:

1. Create regional marketing and transportation cooperatives—to coordinate waste paper collection and brokering; reduce collection, transportation, and processing costs; and enhance quantity and quality of the resource. Three approaches were identified and there was no consensus on which was preferable. The group noted that the legalities of ownership and commerce need to be identified and studied for each of these efforts.
  - Multi-county market cooperatives—to reduce the costs of collection, processing, transportation, and marketing; and to maintain quality and quantity of materials flow. Possibly organized under joint powers agreements between counties.
  - Material recycling facilities (MRFs)—to centralize the collection, processing, and marketing of materials.

## A STRATEGY FOR MARKETING SECONDARY PAPER

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- Multi-state cooperatives—for cooperative efforts on procurement, exports, and education/information; organized by state economic development agencies, the Great Lakes States Recycling Officials, or advocacy groups like the Midwest Recycling Coalition.
2. Identify and support smaller waste paper users—in order to increase local demand and processing capacity for secondary paper, especially in rural areas; including users producing cellulose insulation and animal bedding; organized by local economic development authorities in cooperation with the state.
  3. Increase capacity through provision of tax credits and other incentives for industry expansion—for new buildings and equipment to increase industry utilization of these materials, especially in the short-term. Government has a responsibility to “push” the private sector to expand its capacity to handle these materials.
  4. Modify existing tax and other subsidies that make virgin paper prices artificially low—federal and/or state government action to “level the playing field” and make secondary paper competitive with its virgin counterparts.
  5. Expand recycled paper procurement programs—in government and the private sector, in order to increase demand for secondary fiber; through regulation of government purchasing departments and government-sponsored programs to promote the idea in the private sector.
  6. Impose packaging bans, taxes, or surcharges—as ways to reduce the amount of waste paper and regulate the quality of paper entering the waste stream; industry should also take responsibility for voluntary actions to achieve these goals.
  7. Establish recycled paper content requirements—for all paper products, but particularly for newspapers; governmentally imposed.
  8. Establish standards for products made from recycled waste paper—in order to foster consumer understanding and respond to consumer preferences.
  9. Conduct educational and promotional efforts—to increase general awareness of paper recycling and products made of recycled paper.
  10. Label packaging and other paper products to indicate recycled content and “environmental soundness”—to assist consumers in making responsible purchases with knowledge of full environmental costs.
  11. Define the appropriate roles of government and industry in waste paper marketing—including determining who pays the net cost of recycling and designating who owns the waste paper so suppliers and users can develop long-term contracts and assured markets.
  12. Develop proposals for both regulatory and incentive measures—the threat of legislation or regulation provides a significant incentive for industry to change its practices. Such proposals would also serve to clarify how various programs and policies serve the public interest.

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The group noted that as the overall market for waste paper improves, through the actions mentioned above, the market situation for mixed papers will also improve—increasing the attention, price, and demand for this lesser quality paper.

But the group also identified five additional actions, specifically to overcome the impediments for mixed paper—a waste paper with limited market potential:

1. Impose packaging bans, taxes, or fees—in order to reduce mixed paper at the source and eliminate hard-to-recycle materials from the waste stream. This would include additional fees on and regulation of “junk mail.”
2. Conduct consumer education—to broaden public understanding of the true costs of waste management, to educate consumers about the recyclability of various paper products and grades, and to improve source separation.
3. Improve processing technology—to enhance the usefulness of mixed paper. This could include development of new technology as well as adaptation of methods used elsewhere in the world.
4. Subsidize development of new products and end-uses for mixed paper—through government requests for proposals to universities and industry.
5. After ensuring highest and best use, compost or burn mixed paper as a last resort—in order to get some use out of paper that, because of its mixed quality or contamination, would otherwise go to a landfill.

## **AN ADDITIONAL COMMENT ON RESPONSIBILITY**

The group said it was the government's responsibility to require source separation and collection of secondary paper, but that it should not regulate *how* that is accomplished. The private sector should be responsible for collection, processing, and marketing of waste paper. Consumers should be responsible for paying—through the service or product price—for these industry efforts.

## IV. A STRATEGY FOR MARKETING SECONDARY PLASTICS

The plastics small group consisted of ten people, including a collector, two end-users, a packaging consultant, foundation and University representatives, and three state-level officials (including the Director of the Minnesota Office of Waste Management and the Recycling Coordinator for the State of Iowa). The participants were:

- Patty Billings, Coordinator of Technology and Research, Greater Minnesota Corporation, Minneapolis, Minnesota
- Al Crawford, Section Head, Product Development, Procter and Gamble, Cincinnati, Ohio
- Thomas Halbach, Assistant State Specialist for Water Quality and Waste Management, Minnesota Extension Service, University of Minnesota
- Brian Harper, Technical Director, Hammer's Plastic Recycling Corporation, Iowa Falls, Iowa
- Barbara Henrie, Senior Program Officer, Northwest Area Foundation, St. Paul, Minnesota
- Robert Meddaugh, State Recycling Coordinator, Iowa Department of Natural Resources, Des Moines, Iowa
- Michael Robertson, Director, Minnesota Office of Waste Management, St. Paul, Minnesota
- John Swann, Owner, North Country Recycling, Grand Rapids, Minnesota
- Charles Turpin, Packaging Technology Consultant, Minneapolis, Minnesota
- Tom Peek, *Facilitator*, Writer/Consultant, Santa Cruz, California

### WHAT ARE THE IMPEDIMENTS TO MARKET UTILIZATION OF SECONDARY PLASTICS?

The group identified eleven impediments inhibiting the utilization of Minnesota's secondary plastics, listed below. Those deemed by the group to be most important are marked with asterisks.

- \* Inadequate supply and unreliable flow of plastics—due to limited recycling of this material (including a lack of incentives to do so, especially for large

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users—such as institutions), inconsistent quality and inadequate sorting by resin type, an insufficient number of products made from secondary plastics (especially locally), and an erroneous perception that plastics are not recyclable.

- \* Diffusion of materials caused by distances from markets and myriad brokers—problems which make it difficult for potential users to identify and link up with possible suppliers, and which increase the costs of transportation. There is a need to concentrate supply on a strategic basis.
- \* Variations in quality—caused by a lack of quality standards for materials and packaging, inadequate sorting (and criteria to ensure proper separation), and the commingling of materials (such as plastic-coated paper) during manufacture and collection.
- \* The higher cost of secondary plastics relative to virgin resins—due to low demand for the materials, public subsidies of virgin resins (largely through oil industry subsidies), and the costs of scrap plastic collection and processing.
- \* Lag in the application of technology and the development of infrastructure for the collection and remanufacture of secondary plastics—largely because industry has not yet adjusted to the increasingly important role secondary plastics play in manufacturing (as it has for other materials, such as steel).
- \* Lag in investment for new products made from secondary plastics (especially locally)—because of the limited supply and unreliable flow of material, uncertainty about the economic viability of marketing these materials (a concern particularly among banks and potential investors), and a lack of economic incentives for investment.
- \* The need for a “common language” about recycling and secondary plastics—which often results in misunderstandings in industry and government, as well as among citizens.
- The collection process—especially in rural and semi-rural areas. There is a need to minimize the costs of collection and improve the separation of materials, because we can't afford not to collect these plastics.
- An attitude problem among plastics manufacturers—who think that the disposal system has to accept whatever is given to it. “Front-end” manufacturers feel absolutely free of responsibility to the “back-end” disposal system, and as a result, do not recognize disposal costs as a part of manufacturing expense.
- No incentive for plastics manufacturers to make plastic products in a form that's marketable as a secondary material—as a result, plastics are not designed for potential recycling or reuse.
- Mistaken beliefs about the recyclability of materials—particularly the widespread belief that plastics are not recyclable (even mixed plastics can sometimes be recycled).

### WHAT CAN BE DONE TO OVERCOME THESE IMPEDIMENTS?

The group identified a number of actions to overcome the impediments inhibiting utilization of Minnesota's secondary plastics. These focused on four major problem areas—quality, diffusion of supply, the higher costs of doing business with secondary plastics, and an inadequate recycling/remanufacturing infrastructure.

They identified five specific actions to overcome *quality* problems:

1. Standardize the plastics industry—by establishing materials standards and packaging standards, and by imposing fees on packaging with less recyclable content.
2. Improve sorting of secondary plastics—in order to maximize the intrinsic value of the plastic resins used to make them.
3. Create new applications for plastics of varying quality— for production into “new” materials with new specifications, not just alternatives to virgin plastic.
4. Foster more effective supplier/user “deal-making”—in order to identify mutually agreeable quality specifications within a range on which standards and price compromises can be made, given the nature and form of the materials.
5. Eliminate the use of so-called “biodegradable” plastics—an “industry con” which doesn't actually degrade particularly faster under normal landfill circumstances, and which complicates the use of mixed secondary plastics in manufacturing new products.

The group identified three specific actions to overcome the *diffusion of supply* caused by distances to markets and myriad brokers:

1. Establish materials recycling facilities (MRFs)—to concentrate the collection and brokerage of secondary materials.
2. Establish other cooperative marketing arrangements—locally, regionally within the state, and with others in the Midwest.
3. Create a commodities market for secondary plastics—effectively organized through the MRFs and cooperative marketing arrangements, to create a common expectation about the nature and price of secondary plastics.

(NOTE: The group also acknowledged the importance that industry standardization would have on solving the diffusion of supply problem, since part of the reason for that problem is the widely varying quality of secondary plastics available for making new products. Improved standardization would, for example, be necessary in order to create a commodities market for secondary plastics.)



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The group identified four specific actions to overcome the *relatively higher costs of doing business with secondary plastics*:

1. Enhance the price of secondary plastics through government action—to make secondary materials competitive with virgin plastics, perhaps even, by law, tying the price of virgin resins to the cost of recycled plastics.
2. Remove existing public subsidies on virgin plastics—to eliminate artificial competitive advantages for virgin materials.
3. Shift research and development priorities to acknowledge the increasing importance of secondary plastics—within both the public and private sectors.
4. Create greater demand for secondary plastics—particularly through new product development.

The group identified two types of action to overcome *inadequacies in recycling/remanufacturing infrastructure*:

1. Provide threats as incentives to improve infrastructure—including the threat of government regulation and negative publicity against industries that don't use secondary materials.
2. Provide rewards as incentives to improve infrastructure—including public subsidies to help industry get facilities and equipment on line, and the positive reputations and continuing industry competitiveness of those firms which use secondary plastics (keeping up with their increasing importance in manufacturing and packaging).

### **SPECIFICALLY, HOW SHOULD THE PLASTICS INDUSTRY BE STANDARDIZED?**

The plastics small group focused in detail on standardization of the plastics industry. The discussion centered on the problems with the current standards and standard setting process of the American Society for Testing of Materials (ASTM). According to the group, ASTM standards are not fully utilized and don't always cover new materials made from secondary materials. The ASTM process of developing standards is too slow and their tests are designed primarily for virgin materials and are not always sufficient (or the correct ones) for secondary materials.

As a result, *the group recommended that the testing and standard setting process be reformed*, through one or two possible approaches:

- A. Reform through industry and ASTM by involving the key players, including those concerned about secondary materials.
- B. Reform through a cooperative effort by involving, not only industry and ASTM, but also state and federal governments, environmental groups, and foundations. Such an effort might look at models from other environmental problem areas (such as those used in designing ways to manage land use in Washington and oil exploration in Alaska).

The group also suggested that the ASTM process needs improvement by speeding up the process of setting standards and updating testing methodology to reflect the growth in the use of secondary materials for manufacturing plastics and plastic products.

In addition, *the group recommended better communication of standards to secondary materials suppliers and users*, especially given their diffusion in the marketplace. Those who might take responsibility for improving this communication include not only industry and ASTM, but also states, counties, and state recycling associations.

### **SPECIFICALLY, WHAT STEPS SHOULD BE TAKEN TOWARD ESTABLISHING MRFs AND OTHER COOPERATIVE MARKETING ARRANGEMENTS?**

The plastics small group proposed that *the state of Minnesota should establish materials recycling facilities (MRFs) and other cooperative marketing arrangements*. These should reflect a mix of public and private systems, but should maximize private involvement (perhaps modeled after private industry councils that work on employment training).

A number of difficult issues arise in trying to design MRFs and other cooperative arrangements. Who should control them? Who should manage them? Who takes the profit (and/or losses)? How large should they be? Should there be one big MRF, or many of them? Organized how? Metropolitan-wide in the Twin Cities? Multi-county in rural Minnesota? Who should be allowed to participate in such efforts? Industry? State government? Counties? And what happens to those private entities who have already developed market relationships with counties and others? Should these existing arrangements be displaced? At what cost to those already involved?

Several of these issues revolve around the resolution of a major dilemma that must be faced if the state is going to establish MRFs and other cooperative arrangements: maximizing participation (allowing many suppliers of secondary materials to participate) may seem fair, and might be less disruptive to existing market relationships, but will it engender the maximum use of secondary materials? Put another way, "monopoly brokering," by a large, exclusive MRF, would probably utilize more materials more efficiently, but it would, necessarily, cut out parties that should be allowed to participate.

Because of these difficult issues and dilemmas, *the group recommended that the state of Minnesota, through its Office of Waste Management, should immediately begin the exploration of ideas for establishing MRFs and other cooperative marketing arrangements*. Important considerations for beginning this exploration include the following:

- A. This process should involve the Office of Waste Management's Market Development Coordinating Council and resource groups, as well as other appropriate people and organizations.
- B. The process should not have an exclusive urban focus, but rather should include rural people, perspectives, and data, particularly because of the diffusion problem experienced in outlying areas.
- C. The process should be informed by data and analysis on the structure and operation of these entities, including whatever information exists from other

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states or countries. In addition, the upcoming materials studies by the Metropolitan Council and the Office of Waste Management should be designed to obtain data useful in designing these entities.

- D. The process should acknowledge Minnesota's role in the larger midwestern region and the way in which these cooperative arrangements might be important to the region as a whole.
- E. The process should involve more than just a brokering of interests so that the cooperative entities created have structural integrity. The state should avoid political decisions that, while they may be popular, undermine the goal of effective secondary materials marketing.

## V. A STRATEGY FOR MARKETING SECONDARY GLASS AND METALS

The secondary glass and metals small group consisted of twelve people, including representatives of the scrap metal, glass, and soft drink industries; three community-based nonprofit organizations; the University of Minnesota; and state government (including the Chair of the Legislative Commission on Waste Management, the Market Development Coordinator for the Minnesota Office of Waste Management, and two economic development officials).

- Robert de la Vega, Deputy Commissioner, Minnesota Department of Trade and Economic Development, St. Paul, Minnesota
- Ivan Jacobs, Owner, Mississippi Street Metals, St. Paul, Minnesota; also Legislative Chair of the Northwest Chapter of the Institute of Scrap Recycling Industries
- Liliias Jones, Chair, Eco Solutions, Minneapolis, Minnesota
- Abby McKenzie, Director of Economic Analysis, Minnesota Department of Trade and Economic Development, St. Paul, Minnesota
- Gene Merriam, State Senator and Chair of the Legislative Commission on Waste Management, Minnesota State Legislature, St. Paul, Minnesota
- David Morris, Director, Institute for Local Self-Reliance (Washington D.C.) and Syndicated Columnist, Knight-Ridder Newspapers, St. Paul, Minnesota
- Tim Nolan, Market Development Coordinator, Minnesota Office of Waste Management, St. Paul, Minnesota
- Frank Reid, National Director of Recycling, Anchor Glass Container Corporation, Tampa, Florida
- Ken Reid, Director, Mineral Resources Research Center, University of Minnesota, Minneapolis, Minnesota
- John Squires, Executive Director, Community Resource Group, Springdale, Arkansas
- Peggy Wander, General Manager, Recycle Minnesota Resources (formerly Minnesota Soft Drink Recycle), St. Paul, Minnesota

- John Gilkeson, *Facilitator*, CURA Staff, University of Minnesota, Minneapolis, Minnesota

### WHAT ARE THE IMPEDIMENTS TO MARKET UTILIZATION OF SECONDARY GLASS AND METALS?

The group noted that secondary glass and metals are more fully utilized by their markets than some other recyclables. This is because, in general, they have markets which are fairly strong, and the materials from almost every metal and glass product can be recycled into some new product. Even so, the group identified three major impediments that, if overcome, would increase utilization of these materials:

- Insufficient quality of materials—as a result of inadequate sorting and materials contamination; which leads to less than desirable materials recovery.
- Insufficient demand for products containing secondary glass and metals—because of an orientation on the part of consumers and manufacturers that assumes primary reliance on virgin materials.
- The higher price of secondary glass and metals relative to their virgin counterparts—due to the costs of collection, processing, and especially transportation.

### WHAT CAN BE DONE TO OVERCOME THESE IMPEDIMENTS?

The group discussed numerous ways to overcome these obstacles by enhancing the quality of recycled glass and metal, stimulating demand for end-products made from secondary materials, and lowering the costs of transportation.

They identified twelve specific actions to *enhance the quality* of recycled glass and metals (several of which would, as a by-product, also increase the quantity of materials):

1. Conduct education programs—to explain to the general public and school students how local collection programs work, emphasizing the importance of materials separation. While each sector should inform people about their own programs, general education on recycling and secondary materials use is the responsibility of government, schools, and nonprofit organizations.
2. Set higher recycling goals for glass and metals—because they are easier to separate, involve fewer grades of material, and have more established and stable infrastructure and markets than other secondary materials. Higher goals and the programs to carry them out will result in the diversion of larger volumes of higher quality materials from the waste stream. Goal-setting is the responsibility of state and local government.
3. Improve glass and metals collection—through more widespread, convenient, and visible dropoff, buyback, and on-route collection programs. Local (and state) government are responsible for improvements in publicly operated and funded collection programs, while the private sector should be responsible for providing buyback centers. The nonprofit sector should improve dropoff and collection programs. Private waste haulers should provide enhanced glass and metal collection services to their customers.

4. Require source separation—through mandates, regulations, and incentive-based ordinances, imposed by government at the local, regional, or state levels.
5. Require deposits on glass and metal containers—to segregate the flow of these materials from the mixed solid waste stream, thereby increasing the quality of the materials recovered. Deposits also have a waste reduction effect and are effectively applied to other materials and products. Deposits can be implemented by local, state, or federal government.
6. Establish price signals to enhance source separation—through government regulation or private sector action to change the price structure of these materials. This could be done at the “front end” through fees on packaging and other products, or the “back end” by increasing tipping fees. Responsibility for “front end” changes rests with the state and federal governments.
7. Base garbage collection fees on volume or weight—to reflect the true costs of disposal, thereby providing waste generators with an incentive for source separation of recyclable materials and for waste reduction. These should be imposed by government for publicly operated or franchised collection, by private haulers for the remaining residential and commercial collections. Government could also require private haulers to institute such improvements.
8. Evaluate the relationships between economic incentives and material recovery rates—to measure the effect of various economic incentives on source separation and resulting material recovery rates. Government, in partnership with other sectors, should undertake these studies in order to develop efficient and effective strategies for recovering materials from the waste stream. For this purpose, industry may be required to provide information not currently available to the state. In turn, appropriate confidentiality of this data must be maintained.
9. Improve mechanical separation technology—to overcome problems with the quality of glass and metal material sorted in this manner, particularly the problem of glass breakage and paper contamination. This is a responsibility of industry and other research and development groups. (Note: industry is also responsible for creating markets for the grades of materials produced through mechanical separation processes, such as mixed cullet and other materials.)
10. Improve materials and packaging standards for glass and metal products—to enhance product design and quality for recyclability. Improvements are the joint responsibility of trade and professional organizations, industrial research and development units, the federal government, and standard-setting entities such as ASTM and ANSI (American National Standards Institute). Standards and regulations must be enforceable by government if they are to be effective.
11. Substitute lacquer or enamel for tin plate in metal cans—because there is no longer a technological need for tin plate, except for a very few products, and

this would eliminate significant capital and technological barriers to recycling metal cans.

12. Improve metals processing—by increasing the quantities of, and ways in which, certain grades of metals are used at the mills. This is the responsibility of the industry.

The group also identified five specific actions to *stimulate demand for products containing secondary glass and metals*:

1. Conduct education programs—to promote the use of products containing secondary glass and metals. This is a public sector responsibility.
2. Improve marketing of products containing secondary glass and metals—to convince product end-users and consumers that products containing secondary glass and metals are equal or superior to virgin-based products in quality and overall environmental effects. This also raises awareness of the need to separate materials to feed back into the manufacturing process. This is a private sector responsibility.
3. Improve materials and packaging standards for glass and metal products—so that the resulting enhancement of secondary materials quality stimulates greater interest among manufacturers in using these materials. Such improvements are the responsibility of trade and professional organizations and industrial research and development units, but the standards to do this must come from either government or an independent, nonprofit entity like ASTM.
4. Establish price/cost incentives—such as packaging and other product fees, structured to provide manufacturers with an incentive to use secondary materials in their packaging and products. Such fees would also provide incentives for more durable, reusable, and/or repairable products. These fees would most appropriately be implemented at the state or federal levels.
5. Establish procurement programs—requiring the use of products made from secondary glass and metals. These programs should be established by institutions in both the public and private sectors.

In addition, the group identified four specific actions to *reduce transportation costs*:

1. Subsidize transportation costs—in situations where the market does not work, such as when distances makes transportation of recycled materials cost-prohibitive (for example, 400 miles may be the maximum feasible distance for shipping glass).
2. Set trucking prices to recover glass and metal from low-generation-rate areas—through actions by the industry.
3. Establish transfer centers—for consolidating small loads of secondary materials, particularly in rural areas. These could be the individual or joint responsibility of the private, public, and nonprofit sectors.
4. Establish transportation and marketing brokerages—to lower costs and market materials cooperatively. These could be the individual or joint responsibility

## A STRATEGY FOR MARKETING SECONDARY GLASS AND METALS

of the private, public, and nonprofit sectors. However, a strong government role would be appropriate, given the public ownership of many materials and the public's interest in reducing wastes and conserving resources.





## **VI. THE LARGE GROUP DISCUSSIONS: CONSENSUS, ISSUES, AND DILEMMAS**

While the major work of the participants occurred in the small group sessions, the full group met on several occasions during the course of the two-day workshop—at the opening session, during three small group report-back meetings, and at the close of the workshop. During these discussions several areas of agreement emerged, and a number of unresolved issues and dilemmas were identified. These are summarized below.

### **DID THE GROUP AS A WHOLE AGREE ON ANYTHING?**

The group acknowledged that Minnesota is in a position of leadership on secondary materials market development, both in the Midwest and nationally. This is because of positive attitudes among the citizenry, state and local government, and industry, and because of the substantial financial commitment made by state government and the Metropolitan Council to pursue market development. Minnesota can provide models for directing government and industry to respond with necessary changes in secondary materials collection, processing, and use; package design and manufacturing; and new product development.

There was consensus on the need for public/private cooperation in developing a strategy for marketing Minnesota's secondary materials. In fact, there was a clear recognition that the public and private sectors each have legitimate and important roles to play. While the participants only began the process of sorting out the specific roles and responsibilities of each sector, the discussion went well beyond the typical—and more general—debate about public versus private involvement in market development.

There remained, however, significant questions about particular aspects of system design that have yet to be worked out, such as the dilemmas associated with designing materials recycling facilities and other cooperative arrangements (discussed below). In addition, the best way to leverage available public monies to foster market development remained unclear.

A related issue emerged when a participant asked whether the group felt that recycling, and the use of secondary materials, would eventually be profitable. While there were varying answers to that question, the group generally agreed that government intervention in the market is necessary—even if the use of secondary materials is ultimately not profitable—in order to utilize this important resource and to achieve landfill abatement goals.

The group felt that the "external" costs of waste disposal—costs not reflected in the prices of packaging and other products made from virgin materials—require such strategies, and that the "avoided costs" of disposal justify public expenditures for recycling and materials marketing. As one participant said, there needs to be a "realistic expectation that recycling is not cheap," that these materials are a resource, and that prices must be set with an eye toward "total systems costs," including the costs of virgin resource development and waste disposal.

The group acknowledged that the degree to which public intervention is required will depend on the particular material, and that for some materials, like ferrous metals, the market has done a pretty good job of utilizing the resource that has been diverted from the waste stream.

A number of proposed actions emerged in the discussion that require national attention, and there was general agreement that some of the changes necessary will have to be accomplished through federal government action, including setting standards for materials and packaging, and establishing labeling requirements for these. In addition, there was widespread support among participants for modifying the public subsidies of virgin materials in order to create a "level playing field" and "fair market competition" for secondary materials.

On several occasions, participants talked about the need to reduce wastes at the source, a long-standing goal of recycling advocates and government. While there was general agreement on the urgent need to accomplish this, most of the discussion (by necessity, if not preference) focused on utilizing the secondary materials that result from this wasteful system. There are, however, several dilemmas involved, which are mentioned below. One area of source reduction that drew considerable attention, in both the large and small groups, was the call for packaging redesign and regulations and specifications to accomplish that.

### WHAT WERE THE UNRESOLVED ISSUES AND DILEMMAS?

The tradeoff between maximizing the *amount* and the *quality* of material recovered seemed to be one of the most significant dilemmas that emerged from the groups' discussions. Programs to maximize the diversion of material from the waste stream appear to differ fundamentally from those which are designed to maximize the quality of the materials recovered for "highest and best use." It was noted that the issue of whether to design collection and processing systems and new products to utilize *low-grade*, as opposed to *high-grade*, materials has already come into play in the recycling of glass, paper, and plastics. While some participants suggested that collection and processing systems should be designed to meet both goals—highest and best use of materials *and* maximum recovery of mixed wastes—others argued that these approaches are mutually exclusive, and that it is critically important to determine now what "emphasis" these systems should have, because that will determine how collection, processing, and manufacturing is done in the future.

Related to this was the unresolved question of whether to design recycling strategies to *create new markets for increasing amounts of secondary materials* or to design strategies to *reduce the generation of secondary materials*. The first approach reflects a "disposal" orientation, the goal of which is to find or create markets for

whatever materials end up in the waste stream. The other approach reflects a "source reduction" orientation and involves "behavioral modification"—to get the public, industry, and government to utilize virgin (and secondary) resources more responsibly.

One of the major concerns of the participants was the diffusion of materials as a result of distances from markets (especially in rural areas) and the myriad suppliers of secondary materials. While there was general support for creating cooperative marketing arrangements to deal with this problem, including materials recycling facilities (MRFs), the specific design of those remained unresolved. This was due, not to major conflict within the group about how to organize these entities, but rather a general uncertainty about the fairest and most effective way to do it. This uncertainty revolved around a difficult dilemma—the inherent conflict between maximizing participation in these cooperative entities and maximizing the amount of secondary materials getting to their markets. For example, establishing a large, exclusive MRF, with "monopoly brokering" power, would probably utilize more materials more efficiently, but it would also, necessarily, cut out parties that otherwise might participate in the secondary materials market. In addition, creating these powerful new market instruments, while they may be more effective at getting the job done, will also disrupt existing market arrangements and could displace current market participants.

#### **WHAT HAPPENS NEXT?**

Several participants said that the workshop discussions had been helpful in their own efforts to sort out these issues and that the deliberations would influence the activities and perspectives of their agencies and organizations. But there was concern that the results of the group's deliberations not end with the two-day workshop.

The group expressed keen interest in receiving the "Blueprint for Action" workshop report and agreed to review the document. Interest was also expressed in the possibility of reconvening the participants for a follow-up session, once the "Blueprint for Action" was available. The possibility of holding additional sessions, involving others from Minnesota and from other Midwestern states, was also suggested.



**APPENDICES**



## APPENDIX 1

### WORKSHOP ATTENDEES

Mr. Paul Anderson  
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## APPENDIX 2

### WORKSHOP AGENDA

Center for Urban & Regional Affairs/The Minnesota Project  
Secondary Materials Market Development Workshop  
13 & 14 December 1989  
180 Humphrey Center

#### Wednesday, 13 December

- 8:00 - 8:30 Registration, coffee, get acquainted
- 8:30 - 9:00 Introduction to project  
*Thomas Anding, Susan Schmidt, John Gilkeson*
- 9:00 - 9:30 Brief introductions by attendees
- 9:30 - 10:15 Overview of Market Development at Regional and State Level  
*J. McGough, Metropolitan Council*  
*M. Robertson, Office of Waste Management*
- 10:15 - 10:30 Break
- 10:30 - 12:00 Review of Market Status Report: "Building a Strategy for Marketing Minnesota's Secondary Materials" *Thomas Peek, Author*
- 12:00 - 1:15 Lunch, Humphrey Center Dining Room
- 1:15 - 2:45 Small group discussions of market impediments and actions to overcome them
- 2:45 - 3:15 Report back to full group
- 3:15 - 3:30 Break
- 3:30 - 4:45 Small group discussions of impediments, actions, and options for particular materials
- 4:45 - 5:15 Report back to full group
- 5:15 Adjourn

#### Thursday, 14 December

- 8:00 - 8:30 Coffee and informal discussion
- 8:30 - 9:00 Summarize highlights of previous day and set stage for small groups
- 9:00 - 10:30 Small group discussions to identify who is responsible and how
- 10:30 - 10:45 Break
- 10:45 - 12:00 Large group discussion: "Synthesis of the Blueprint Strategy"
- 12:00 - 1:30 Lunch, Humphrey Center Dining Room  
Workshop Wrap-up



## APPENDIX 3

### SECONDARY MATERIALS

Secondary materials are materials collected for re-use or re-processing into new products, specifically including the following:

Waste paper includes the following:

- Old newspapers—old newsprint
- Corrugated (paperboard)—a rigid paper structured in parallel furrows, such as cardboard boxes
- High-grade paper—white or colored ledger (office paper) or computer paper
- Mixed paper—low and high grade paper in mixed form
- Fiber barrels—drums made from strong paper fibers, such as 55-gallon drums

Plastics include the following:

- PET—polyethylene terephthalate, used in beverage bottles and other food and household products
- HDPE—high density polyethylene, used in milk and water jugs and many other products
- LDPE—low density polyethylene, a plastic film used for food packaging wrap and garbage bags
- PS—polystyrene, used in cups and bowls, fast-food foam containers, cassette tapes and cutlery
- PP—polypropylene, used in housewares, containers and battery cases
- PVC—polyvinyl chloride, used in pipes, drains and furniture
- ABS—acrylonitrile butadiene styrene, used in automobile trim, grills and telephone bodies
- Mixed plastics—a mixture of different plastic types

Glass includes the following:

- Color sorted—glass containers separated by color (i.e. clear/flint, green, amber/brown)
- Color mixed—glass containers of different colors mixed together
- High tempered—tempered glass, used in automobile glass, window panes and plate glass
- Other glass—glass materials, other than containers and high tempered glass, such as mirrors and lightbulbs

Metals include the following:

- Automobiles, auto parts and auto scrap—(respectively) whole automobiles or auto bodies; reusable or rebuildable auto parts; and scrap metal from cars and automotive parts which can't be rebuilt
- Ferrous—metals which have magnetic character and contain iron, such as cast iron
- Nonferrous—nonmagnetic metals with no iron content, including aluminum, copper, lead and brass
- Aluminum scrap—aluminum in scrap form, such as window and door frames, lawn furniture frames and drain pipes
- Aluminum cans—usually twelve ounce soda pop cans (UBC—used beverage cans)
- Bi-metal beverage cans—steel beverage cans with steel tops or bottoms
- “Tinned” food cans—tin-plated steel cans, such as soup, vegetable and pet food cans
- White goods—large appliances, such as washing machines and refrigerators, accepted in whole form or as scrap
- Machinery—equipment, such as farm machinery, which is accepted as scrap or reusable parts

Batteries include:

- Automobile batteries—common lead-acid batteries from cars, trucks, tractors, snowmobiles and motorcycles
- Other batteries—includes batteries made with mercury (used in hearing aids), lithium (used in calculators), alkaline (used as common household batteries), nickel cadmium (for rechargeable batteries), and dry-cell batteries

Rubber : material primarily from tires, as well as other rubber items

Oil: used motor oil, such as from automobiles, trucks and other vehicles

Textiles: usable or wearable clothing, rags or clean textile scraps

Yard Wastes: brush (such as tree branches and bush trimmings), grass clipping, leaves and other yard wastes

Construction materials: materials resulting from demolition or construction, including tar, asphalt, cement and concrete.

Wood: reusable pallets (for transport and storage) scrap lumber (used as small pieces for construction and manufacturing shorts) and other scrap lumber or pallets (used for firewood)

Note: Other secondary materials exist—including renderings (from animal hides and oils), hardware (used bricks, pipes, etc), and household materials (such as bric-a-brac, furniture and small appliances).

Sources: Minnesota Waste Management Board, 1988, *Minnesota Markets for Recyclable Materials Directory*, St. Paul, Minn.; Minnesota Office of Waste Management, glossary of terms; Gilkeson, pers. comm. with author, November 20, 1989.





## APPENDIX 4

### COMPOSITION OF THE MINNESOTA AND U.S. WASTE STREAMS COMPARED

(by weight in percentages of the Minnesota and U.S. waste streams)

<u>Material</u>	<u>Minnesota Percent of Waste Stream</u>	<u>United States Percent of Waste Stream</u>
Waste paper	38.3	41.0
Plastics	3.6	6.5
Glass	6.0	8.2
Metal	7.6	8.7
Rubber	1.9	N.C.
Leather/Textiles	1.8	N.C.
Rubber/leather/textiles total	3.7	4.3
Wood	5.7	3.7
Yard wastes	11.7	17.9
Food wastes	12.2	7.9
Miscellaneous/other	20.5	1.8

NOTES: N.C. indicates non-comparable data due to categorization.  
Due to rounding, the Minnesota percentages do not total 100 percent.

Sources: Resource Conservation Consultants/Pope-Reid, 1988, *Inter- mediate Processing System Demonstration Project*, St. Paul, Minn.: Ramsey County, Washington County, and Northern States Power Company, p. 2-2; Franklin Associates, *Characterization of Municipal Solid Waste in the United States, 1960 to 2000 (Update 1988)*, Washington D.C.: U.S. Environmental Protection Agency, p. 21

### DISCUSSION

Unfortunately, Minnesota data detailing the amounts and types of waste generated, the composition of the waste stream, and the percentages of materials recycled, do not exist, making direct comparisons with the national data difficult. However, several composition studies have been conducted in recent years for particular counties and the Twin Cities metropolitan area. One study, prepared by Resource Conservation Consultants with Pope-Reid Associates, compared four counties—Benton, Hennepin, Olmstead, and Wright—each varying in their estimates of waste stream composition. By averaging the available estimates of those counties, a very rough, but illuminating, set of percentages can be calculated for the state as a whole. These are

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included in the above table, along with the Franklin Associates comparable figures for the nation.

Other studies, using varying methodologies during different periods of time, have yielded generally similar results. However, significant variations in the proportions of some materials are evident. For example, one study, done in 1988 by Cal Recovery Systems, Inc. for the Metropolitan Council of the Twin Cities Area, looked at the waste stream composition of the seven metropolitan counties and reported significantly higher percentages of plastics and lower percentages of glass and metal than the Resource Conservation Consultants/Pope-Reid study. These variations underscore the need for more reliable and consistent data on Minnesota's waste stream composition.

## APPENDIX 5

### SCORE LEGISLATION: ROLES AND RESPONSIBILITIES

(With Appropriations for the Remainder of the Biennium)

#### OFFICE OF WASTE MANAGEMENT (OWM) RESPONSIBILITIES

(\$4.8 Million, 12 positions)

##### Recycling Goal Implementation (\$750,000)

- \* Distributes pass through funding to all counties. May withhold all or part of the funds if counties fail to comply with requirements for receiving funding.
- \* Reports on how pass through funding was spent by all counties and resulting statewide improvements in waste management to the House Appropriations Committee and the Senate Finance Committee and the LCWM. Due 11/1 of each year.
- \* Reviews and approves as appropriate non-metro county plan amendments and recycling implementation strategies to be used in meeting recycling goals.
- \* Establishes interim recycling goals for non-metro counties.
- \* Monitors the progress of non-metro counties and reports to the LCWM on progress made to achieving goal by 11/1 of each year.
- \* Must negotiate with non-metro county to develop and implement techniques designed to assist in the achievement of the goal if a county is not progressing toward the goal.
- \* If negotiations fail, can recommend legislation to the LCWM to establish mandatory recycling and to mandate the use of solid waste management techniques.
- \* Must develop materials for counties to use in providing information on and promotion of recycling programs.
- \* Must provide technical assistance to counties to help implement recycling programs.
- \* Provides funding for the Low-Tech grant program which had run out of money.  
(Low-Tech grants are available for non-capital recycling costs, such as collection costs.)

##### Market Development Activities (\$2.4 Million)

- \* Directs the OWM to make grants and loans for the development of markets or end uses for recycled materials. (Capital grants/loans to private entities: maximum grant is 25 percent of capital costs or \$500,000, whichever is less; maximum loan is 50 percent of capital costs or \$2 million, whichever is less.) At least 50% of the funds appropriated for market development must be used to support county market development efforts.
- \* Must develop a transportation system for getting recyclable to markets and processing centers. May include regional collection centers. Joint responsibility with Commissioner of Mn.DOT.

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- \* (1989 amendments to the Waste Management Act require the Director to appoint a market development coordinating council.)

### **Waste Reduction Activities (\$525,000)**

- \* Develop and coordinate waste reduction program including at least public education, promotion of waste reduction, and technical and financial assistance.
- \* Authorizes a grant and loan program for solid waste reduction activities by the public and private sectors.

### **Waste Education Activities (\$750,000)**

- \* The membership and structure of the Waste Education Coalition is formalized in statute. Adds three persons from private industry with expertise in recycling and solid waste management.
- \* Must develop a statewide waste management public information campaign that can be adapted for use by political subdivisions.
- \* Must develop and disseminate waste education curricula for grades k-12.
- \* Will provide grants to persons to develop and distribute waste education information.
- \* Will provide grants to educational institutions.
- \* Must include waste reduction as part of public education program. May include an award program for model waste reduction efforts.

### **Problem Materials and Special Waste Activities (\$225,000)**

- \* Report to legislature and LCWM on mechanism to indicate environmentally sound products. Due 6/30/91.
- \* Develop plan to designate problem materials and available capacity for processing and disposal of such, including HHW that should not be mixed with MSW.
- \* After certifying processing and disposal capacity, develop a plan for separating, collecting, and transporting problem materials to processing or disposal facilities and may prohibit disposal with MSW.
- \* Develop household battery management program. Coordinate with LCMR battery study and industry, political subdivisions, and state agencies. Develop guidelines for collection, processing and disposal. May also consider grant programs for battery management plans and implementation. May also investigate collection and transportation, educational materials, and market development. Report to LCWM on activities and make recommendations by 11/1/91.
- \* Must prepare a report on the disposal of major appliances. Due to LCWM and legislature by 7/15/90.

- \* Study the appropriate management of plastic material. Analyze trends, impacts, recyclability and market development, and use of degradable plastics on reuse and recycling. Make recommendations to LCWM by 1/1/91.

#### Miscellaneous Activities

- \* Must review and approve as appropriate non-metro county plan amendments dealing with household hazardous waste management.
- \* May make grants to a county for its litter programs if the litter programs are included in solid waste management plan. (\$150,000)
- \* Requires that at least three members of the Solid Waste Management Advisory Council have experience in the private sector recycling industry and increases the number of members up to 21.

#### POLLUTION CONTROL AGENCY RESPONSIBILITIES

(\$2.55 Million, 7 positions)

- \* Shall establish a statewide program to manage household hazardous wastes, including collection sites and the provision of information, education, and technical assistance.
- \* Must conduct a four season waste composition study on a statewide and regional basis to provide information on the amount of waste generated and the amount of recyclables and noncombustibles in the waste.
- \* Designates recycling centers so that the center can get a recycling sign from DOT.
- \* May adopt rules that identify products used primarily for personal, household or family use as problem materials, and may prescribe a uniform label to be affixed by retailers to identified products.
- \* Must prepare and supply retailers with information to comply with the uniform labeling rules. (materials prepared in conjunction with Dept. of Agriculture)
- \* Must adopt rules requiring a resource recovery or disposal facility to submit a management plan for the separation of HHW prior to disposal or processing and for the proper disposal of the waste. After 6/30/92, PCA cannot grant or renew a permit for a facility that has not submitted a plan.
- \* Must prepare and distribute a safety guide for the operation of recycling and yardwaste composting facilities.

#### DEPARTMENT OF ADMINISTRATION RESPONSIBILITIES

(\$300,000, 3 positions)

- \* Recycled content and recyclability of item to be considered in bid specifications.
- \* Report to governor and LCWM on efforts to implement the purchase of products containing recycled materials and implementation of a cooperative purchasing program. Report due January 1 of odd-numbered years. PCA and Public Service to submit program recommendations to Adm. Commissioner by July 1 of even-numbered years.

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- \* Directed to develop and promote a cooperative purchasing program to include state agencies, local unit of government and federal agencies.
- \* Directed to develop a waste reduction procurement model.  
Office of Waste Management to develop informational materials to promote model to public and private entities.
- \* Mandates 40 percent recycling by state offices in the metro area. Requires data collection and sharing of data with Met Council and metro counties.
- \* **With Department of Public Service**, prepare report on barriers to recycling in buildings, and in the Capitol Area and make recommendations to address barriers caused by building, safety, and fire codes, and historical preservation. Due to LCWM 11/1/90.
- \* Study and evaluate state purchasing and contract practices to ensure procurement and use of recycled materials. Develop a plan and implementation strategy and present to LCWM by 7/1/91.

### OTHER STATE AGENCY RESPONSIBILITIES

#### All State Agencies:

- \* Should purchase recycled materials when practical to use and price does not exceed 10 percent of non-recycled materials.
- \* Should purchase materials from waste generated in the state.
- \* Should purchase uncoated office paper whenever practicable. (Directive to "public agency" includes school district, county, city, towns.)
- \* Requires that all building under the control of the agency provide recycling containers for at least three materials and delivery of materials to a recycler. In the metro area by 1/1/91, outstate by 1/1/93.

#### Department of Transportation (DOT):

- \* Must develop a transportation system for getting recyclable to markets and processing centers. May include regional collection centers. Joint responsibility with OWM.
- \* Must design and manufacture a recycling center sign to meet state and federal highway sign standards.
- \* Receives fee from recycling center to cover the cost of sign fabrication and installation.

#### State Planning Agency:

- \* Develops and disseminates model zoning criteria for use by local governments in siting recycling facilities.

**Department of Revenue:**

- \* Collects 6 percent sales tax on garbage collection and disposal services. Sales tax becomes effective 1/1/90.
- \* Makes an estimate of the amount of revenue collected from the sales tax and reports to House Appropriations Committee and Senate Finance Committee and to the LCWM.

**Department of Agriculture:**

- \* Commissioner may adopt rules to provide consumer information and retail handling of pesticides, fertilizers, and plant and soil amendments.

**State Board of Education:**

- \* Must amend its rules to require a waste education component, effective beginning in the 1991-1992 school year.

**METROPOLITAN COUNCIL RESPONSIBILITIES**

- \* Monitors the progress of metro counties and reports to the LCWM on progress made in achieving goal by 11/1 of each year.
- \* Must negotiate with county to develop and implement techniques designed to assist in the achievement of the goal if a county is not progressing toward the goal.
- \* If negotiations fail, can recommend legislation to the LCWM to establish mandatory recycling and to mandate the use of solid waste management techniques
- \* Metro policy plan must include recycling and HHW management provisions consistent with SCORE legislation.

**COUNTY RESPONSIBILITIES**

(\$22,281,000)

- \* To receive pass through funding in the first year a county must create a separate account in its general fund, and set up accounting procedures to ensure that the money is spent for certain purposes. In the following year a county needs an approved solid waste management plan, a recycling implementation strategy, and a HHW management plan.
- \* A county may spend pass through funding on: waste reduction, recycling, market development, proper management of problem materials, information and education programs on solid waste, litter prevention. (Article 19, sec. 1, subd. 2.)
- \* Must submit report to OWM by August 1 of each year detailing how the money was spent and resulting gains.  
(Requirement for future pass through money.)
- \* Must provide evidence to OWM that local revenue equal to 25 percent of pass through funding will be spent for the same purposes for which pass through money can be spent.  
(Requirement for pass through money.)



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- \* May impose a special levy of up to 25 percent of the pass through funding to be received.
- \* Establishes recycling goal of 25 percent by weight of the total solid waste generated by 12/31/93 in outstate counties and a recycling goal of 35 percent by weight of the total solid waste generated by 12/31/93 for metro counties.
- \* Total solid waste generation includes: materials separated for recycling, materials separated for yardwaste composting, and municipal solid waste plus yardwaste, used oil, tires, lead acid batteries, and major appliances.
- \* If interim goals are not met in non-metro counties the county must: notify residents of failure to achieve goal and why, and must provide residents with information on recycling programs in county.
- \* Must amend county plan to address implementation of recycling goal and to provide financial incentives to reduce waste and recycle.
- \* Must amend plan to address the management of household hazardous wastes (HHW). County must implement its HHW management plan by 6/30/92.
- \* Must develop and implement a permanent program to manage HHW by 6/30/92. Must include at least quarterly collection and must be consistent with master plan and described in county solid waste plans.
- \* Non-metro counties must develop a recycling implementation strategy, including materials to be recycled and funding needs and permanent sources of local funding for recycling. (Metro counties already have this requirement.)
- \* Must provide an opportunity to recycle to county residents by 10/1/90. (opportunity to recycle is defined in Article 18, sec. 13, subd. 2.)
- \* Must provide for the recycling of problem materials and major appliances by 10/1/90.
- \* Must assess operation of proposed and existing recycling centers in ensuring opportunity to recycle.
- \* Must provide information on how, when, and where materials can be recycled and develop promotional information.
- \* Must ensure that separated materials are taken to markets for sale or to recyclable materials processing centers.
- \* May require county or municipal licenses for collection of recyclable materials.
- \* A county or solid waste management district cannot delegate a responsibility for solid waste management to another unit of government unless it establishes a funding mechanism to carry out the responsibilities delegated.
- \* A county may by resolution adopt the licensing authority of a city or town that does not issue license for garbage collection.

- \* County board can regulate by ordinance the unauthorized dumping of waste.
- \* County may adopt financial incentives to recycle by requiring haulers to charge collection fees based on volume or weight, or to provide a financial incentive to persons who source separate recyclable materials.

#### LOCAL UNIT OF GOVERNMENT RESPONSIBILITIES

- \* Requires that all buildings under the control of the unit provide recycling containers for at least three materials and delivery of materials to a recycler. In the metro area by 1/1/91, outstate by 1/1/93.
- \* Directs political subdivisions, educational institutions, and public agencies to procure items that encourage waste reduction recycling, and the development of markets for recycled materials and compost. Directs OWM to provide technical assistance and advise on how to achieve this.
- \* Political subdivisions that purchase collection and disposal services on behalf of its citizens must pay the sales tax on cost of those services.
- \* A city that imposes a sales tax cannot tax garbage collection services.
- \* Requires that haulers have a license to collect garbage and authorizes cities and towns to issue licenses. (If city fails to act, county may adopt licensing authority.)
- \* Requires licensing authority to base charges for collection services on the weight or volume of the waste collected.
- \* Licensing authority may impose requirements consistent with the county's solid waste plan.
- \* A political subdivision that pays for garbage collection services must make the prorated share of those costs visible and obvious to each generator.
- \* Political subdivisions are preempted from adopting packaging or labeling requirements different from the state. Prohibition in effect until 6/30/90.
- \* Town boards and city councils can regulate by ordinance the illegal dumping of waste.

#### OTHER PROVISIONS

##### Sanitary Districts:

- \* With authority to regulate solid waste have the same duties and authorities as counties, but do not receive pass through grants.

##### Retailers:

- \* Must implement uniform labeling rules if developed by MPCA.
- \* Must maintain and display information materials on the proper disposal on problem materials sold or offered for sale.

## A BLUEPRINT FOR ACTION

- \* Retailer will charge \$5.00 per battery sold unless a used battery is returned within 30 days from time of purchase.
- \* Retailers who sell lead acid batteries must accept used batteries from the consumer without charge and must recycle used batteries.
- \* Retailers must post a notice informing consumers that retailer will accept old batteries and will charge \$5.00 if an old battery is not returned when a new battery is purchased. A similar notice must accompany a newspaper ad for new lead batteries.

### **Miscellaneous:**

- \* White goods banned from disposal or processing facility after 7/1/90.
- \* Increased civil penalty for littering.
- \* State agency or political subdivision may bring a civil action to recover costs associated with littering.
- \* A private person may join a state or political subdivision to recover damages for littering.
- \* Resource recovery and disposal facilities have to submit a management plan for the separation of HHW prior to disposal or processing and for the proper disposal of the waste. After 6/30/92, PCA cannot grant or renew a permit for a facility that has not submitted a plan.

Prepared by the Office of Waste Management  
October 19, 1989

## APPENDIX 6

### 1990 Compromise Tax Bill: SCORE Waste Reduction and Recycling Legislation ARTICLES 18 - 24 SOLID WASTE REDUCTION AND RECYCLING

These articles encourage solid waste reduction and recycling by:

- requiring related purchasing and recycling programs by state and local agencies;
- setting recycling goals for counties;
- distributing funds to counties;
- imposing a sales tax on waste collection to fund the programs;
- establishing programs for market development and litter prevention; and
- encouraging study of materials that cause problems in the waste stream.

#### ARTICLE 18 RECYCLING REQUIREMENTS AND PROGRAMS

SECTION 1 requires the Department of Administration to take recycled content into account when purchasing. State agencies must buy recycled material when allowable and the cost is no more than 10 percent greater.

SECTION 2 requires state agencies to buy uncoated paper when practicable.

SECTION 3 adds plastics to the list of things included in the definition of recyclable materials.

SECTION 4 adds three members to the Solid Waste Advisory Council to represent private recyclers.

SECTION 5 requires the Department of Administration to include in its biennial report:

- (1) a list of purchases with recycled content;
- (2) results of performance tests on (1);
- (3) a list of all organizations participating in the cooperative purchasing program; and
- (4) a list of purchases that are recyclable.

SECTION 6 requires development by the Department of Administration of a model expanded life cycle procurement system to purchase durable and repairable goods to reduce waste generation.

SECTION 7 requires the Department of Administration to develop and implement a cooperative purchasing program with other units of government for purchasing recycled or recyclable materials.

SECTION 8 requires the Department of Administration to recycle 40 percent of state agency waste generated in the metropolitan area by December 31, 1993.

SECTION 9 requires state and local agencies to have containers to recycle at least three materials by:

- (1) January 1, 1991, for the metro area; and
- (2) January 1, 1993, for the nonmetro area.

## A BLUEPRINT FOR ACTION

**SECTION 10** requires political subdivisions and government agencies to pursue practices to procure recycled and recyclable materials.

**SECTION 11** provides that the Office of Waste Management (OWM) will make grants to persons to develop markets for recycling. At least 50 percent of any funds for market development must go for support of county market development efforts.

**SECTION 12** requires that by December 31, 1993:

- (1) nonmetro counties must recycle 25 percent of their solid waste; and
- (2) metro counties must recycle 35 percent.

If they fail to meet the goals, mandatory standards may be recommended for legislation. Counties must plan for recycling and have a recycling implementation strategy.

**SECTION 13** requires that, effective 10-1-90, each county must have at least one recycling center and provide for recycling of problem materials and major appliances. Cities of more than 5,000 persons in the metro area and cities of the first and second class must have curbside pickup of recyclables. Counties are to provide public information.

**SECTION 14** provides that counties must ensure transportation of recyclables to market and may license recyclables collectors. The OWM must establish a statewide transportation system.

**SECTION 15** provides that the Western Lake Superior Sanitary District (WLSSD) is a county for the purposes of this bill.

**SECTION 16** provides that the Pollution Control Agency (PCA) will designate recycling centers which must be open at least 12 hours per week, 12 months per year.

**SECTION 17** requires the State Planning Agency to adopt model zoning criteria for placement of recycling centers.

**SECTION 18** requires the Department of Transportation to design and manufacture recycling center signs. Recycling centers may purchase them and put them up.

**SECTION 19** requires the Department of Administration to study building, fire safety and historical preservation code barriers to recycling and make any resulting recommendations to the Legislative Commission on Waste Management (LCWM).

**SECTION 20** provides that section 13 is effective 10-1-90 and the remainder of the article is effective the day following final enactment.

### **ARTICLE 19 REVENUE FOR RECYCLING AND SOLID WASTE PROGRAMS**

#### **SECTION 1**

Subdivision 1 provides that money appropriated for county programs must be distributed \$55,000 to each eligible county and the remainder to the counties based on population.

Subd. 2 provides that the money must be spent on solid waste reduction and recycling programs.

Subd. 3 states that counties which plan and implement recycling programs and provide a 25 percent match are eligible for the distribution. The OWM may withhold funds from a county for noncompliance with subdivisions 2 and 3.

Subd. 4 requires counties to report on use of the money to the OWM and the Office must report to the LCWM.

SECTION 2 allows counties to use a special levy to raise the 25 percent match required under section 1.

SECTION 3 defines solid waste collection and disposal services as a sale for the purpose of the sales tax.

SECTIONS 4 AND 5 require payment of the sales tax by nonprofit and governmental entities.

SECTION 6 provides that revenue from the tax goes to the general fund to be used to fund solid waste programs.

SECTION 7 specifies how the tax works. Generally, it is paid on the cost of service whether the cost is paid by a local government or by individuals. Recycling costs and government-imposed landfill surcharges are exempt from the sales tax. Cities that impose a general sales tax are prohibited from imposing the tax on solid waste disposal and collection services.

SECTION 8 requires the Revenue Department to estimate the amount of revenue generated and collected under the new sales tax and report the estimates to the Legislature by November 1, 1990.

SECTION 9 provides that the sales tax is effective for sales after December 31, 1989, with the remainder of the article effective the day following final enactment.

## ARTICLE 20 SOLID WASTE COLLECTION AND DISPOSAL

SECTION 1 defines major appliances.

SECTION 2 defines problem material.

SECTION 3 requires counties to include recycling and management of household hazardous waste in their solid waste plans.

SECTION 4 requires that if a county delegates responsibility for solid waste management to another government unit, it must establish a funding mechanism to go along with it.

SECTION 5 requires the OWM to coordinate waste reduction programs including providing technical assistance and grants.

SECTION 6 specifies that disposing of an automotive battery is a misdemeanor.

SECTION 7 requires a transporter of automotive batteries to deliver them to a recycler. Violation is a misdemeanor.

SECTION 8 requires mixed municipal solid waste collectors to be licensed. Cities and towns may issue licenses. Counties must license collectors in cities or towns that do not license collectors. A license must require volume or weight-based pricing of collection services.

## A BLUEPRINT FOR ACTION

**SECTION 9** requires political subdivisions that provide or pay for waste collection to make the prorated share of those costs obvious to the generators.

**SECTION 10** states that the PCA may identify problem materials. The PCA and Department of Agriculture (for pesticides, fertilizers, etc.) may prepare informational materials and retail shelf labeling for problem materials. Retailers must use the labels and make the information available.

**SECTION 11** requires that by June 30, 1991, the OWM must submit a report to the LCWM on a "mechanism to indicate that products are environmentally sound."

**SECTION 12** requires the OWM to find and certify ways to recycle or dispose of problem materials and then plan for their separation from waste.

**SECTION 13** states that major appliances may not be placed in solid waste or solid waste disposal or processing facilities after July 1, 1990.

**SECTION 14** requires the OWM to investigate options and develop guidelines for a household battery program. Political subdivisions may implement a household battery program.

**SECTION 15** makes the PCA household hazardous waste program statewide with a report on establishment of permanent collection sites.

**SECTION 16** specifies what must be included in counties' household hazardous waste plans.

**SECTION 17** establishes a civil penalty for littering of at least 2 and not more than 5 times the cost of cleanup plus litigation costs. A private landowner may join an action brought by a county attorney to get damages for injury to private property.

**SECTION 18** provides that the OWM may make grants to counties for litter prevention if the county has a litter plan.

**SECTION 19** prohibits, after June 30, 1992, the PCA from issuing or renewing a permit for a solid waste facility that does not have a household hazardous waste plan.

**SECTION 20** preempts local governments from enacting packaging requirements until June 30, 1990.

**SECTIONS 21 AND 22** place a \$5 surcharge on automotive batteries sold at retail to be repaid to the customer if the customer returns a used battery.

**SECTION 23** authorizes a town board of supervisors to prohibit unlawful deposit of solid waste and require landowners to clean up or be charged for cleanup.

**SECTION 24** authorizes county boards to do same as section 23.

**SECTION 25** authorizes counties to require volume-based pricing for waste collection or other financial incentives to encourage recycling.

**SECTION 26** authorizes city councils to do same as section 23.

**SECTION 27** requires the Metropolitan Council to include recycling and household hazardous waste management in its overall solid waste plan.

SECTION 28 requires metro counties to do same as section 27.

SECTION 29 requires metro counties to provide at least quarterly collection of household hazardous waste beginning June 30, 1992.

SECTION 30 provides that section 20 is repealed June 30, 1990.

SECTION 31 makes this article effective the day following final enactment.

#### ARTICLE 21 WASTE EDUCATION

SECTION 1 adds three members to the waste education coalition to represent private recyclers. The OWM is to develop informational materials and recommend educational curricula. The OWM must make grants for developing and distributing waste education materials.

SECTION 2 requires the state board of education to develop a waste education component as part of the minimum comprehensive educational programs for elementary and secondary levels.

SECTION 3 makes this article effective the day following final enactment.

#### ARTICLE 22 WASTE SPENDING

SECTION 1 requires that by 7-15-90, the OWM must report on disposal of major appliances to the LCWM.

SECTION 2 requires the PCA to develop and distribute a safety guide for operation of recycling or yard waste composting facilities.

SECTION 3 requires the PCA, OWM and Metropolitan Council to study solid waste composition and report to the LCWM by 11-1-92.

SECTION 4 requires the Department of Administration to study and evaluate its purchasing practices for their encouragement of procurement and use of recycled materials and to develop a plan and implementation strategy for improvement and present all of the above to the LCWM.

SECTION 5 requires the OWM to study proper management of waste plastics.

SECTION 6 makes this article effective the day following final enactment.

#### ARTICLE 23 OFFICE OF WASTE MANAGEMENT

SECTION 1 appropriates \$500,000 for fiscal year 1990 and \$2,150,000 for fiscal year 1991 from the general fund to the OWM for general operations.

SECTION 2 makes this article effective the day following final enactment.



ARTICLE 24  
APPROPRIATIONS

SECTION 1 appropriates \$7,687,000 from the general fund to the OWM, the PCA, the Department of Administration and the Department of Revenue.

SECTION 2 appropriates \$22,281,000 (\$6,731,000 in FY 1990 and \$15,550,000 in FY 1991) to the OWM for the county block grants program. For fiscal year 1990, the minimum payment to a county is reduced to \$27,500. Section 2 also requires that if the Revenue Department Report in Article 17, section 8, shows revenue collection different than \$29,968,000, 75 percent of the excess or deficiency must be added to or subtracted from the county block grant appropriation. The maximum amount added to the county block grant appropriation from excess revenue is \$5 million. Any excess revenue that goes to the county block grants must first be distributed so that each county is assured of receiving at least 50 percent of the revenue generated in that county by the tax. Any remainder must be distributed among all counties in proportion to their population.

SECTION 3 makes this article effective the day following final enactment.

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