

RECYCLING IN THE 90s



A SHARED RESPONSIBILITY

A Public Education Initiative



Waste Management, Inc.

WASTE MANAGEMENT, INC.

Waste Management, Inc. (WMI) is the nation's largest collector and processor of recyclable materials. Because of our leadership position, WMI has produced "Recycling in the 90s: A Shared Responsibility" to outline key areas for positive, collective action on recycling by consumers, recycling service providers, product makers, and government.

WMI has been doing and will continue to do its part through offering recycling services to make recycling work effectively. To date, the Company has:

- Invested hundreds of millions of dollars in establishing an infrastructure for the collection, sorting and marketing of materials
- Joined with major U.S. companies to form recycling marketing alliances
- Worked with environmental organizations to develop and sponsor national education programs on recycling
- Provided testimony in state and federal hearings regarding recycling legislation and labeling requirements
- Actively participated with local recycling advocacy groups and state task forces to help shape recycling policies

WMI is stepping forward to facilitate discussion between consumers, recycling service providers, product makers and government on how to ensure the success of recycling in the 1990's. We must recognize that the responsibility for cooperative action rests with each of us, and move ahead together in that spirit.



INTRODUCTION

Recycling means different things to different people. To consumers, recycling can mean putting out bottles and cans for curbside collection. To a product maker—a manufacturer of raw materials, fabricator of goods or products, or brand owner — recycling can mean reformulating goods to include recycled materials. To recycling service providers, recycling can mean providing cost-efficient collection services. To public policy makers in all levels of government, recycling can mean establishing collection and utilization regulations.

For recycling to work successfully, these diverse groups must work together and share responsibility for its success.



THE CURRENT STATE OF RECYCLING

If recycling is to succeed on a large scale and over the long term, three critical points must first be addressed:

APPROACH

Recycling must be approached as an option for an integrated solid waste management system which could also include source reduction, treatment, waste-to-energy, composting and disposal.

ECONOMICS

The economics of recycling must be understood and improved. Contrary to popular belief, the costs associated with the collection and sorting of recyclable materials are not covered by revenue generated through sales of the processed recyclables.

MARKETS

Markets for recycled materials must be stimulated, expanded and sustained.

SOURCE: U.S. ENVIRONMENTAL PROTECTION AGENCY, CHARACTERIZATION OF MUNICIPAL SOLID WASTE IN THE UNITED STATES: 1992 UPDATE, PREPARED BY FRANKLIN ASSOCIATES, LTD. JUNE 1992



COMPOSITION OF MUNICIPAL SOLID WASTE BY % OF WEIGHT

INTEGRATED SOLID WASTE MANAGEMENT SYSTEMS:

WHERE DOES RECYCLING FIT IN?

The role of recycling as part of an integrated solid waste management system must be evaluated by material type on a local and regional basis. For example, markets and environmental conditions in one place may favor collecting and recycling magazines. In other locations, collecting only newspaper may be more sensible. Different local conditions will require customized recycling responses.

Environmental benefits should be considered, of course, keeping in mind that collection, sorting and processing of recycled materials have their own environmental impacts. Along with the environmental considerations, the economics of recycling must also be taken into account in deciding how and what to recycle.

CASE IN POINT: COMPOSTING



Composting is a good example of how to apply contemporary thinking to integrated solid waste management. Currently, recycling focuses on highly visible consumer products like aluminum, newspaper, glass, steel and plastics. But traditionally recycled materials account for only part of the diversion that can be achieved.

Organic wastes, such as grass, leaves and food make up nearly one-quarter of the waste stream. If we hope to meet legislative recycling mandates, we must consider how to economically remove and utilize compostable and other materials from the waste stream.

THE ECONOMICS OF COLLECTING AND SORTING RECYCLABLE MATERIALS

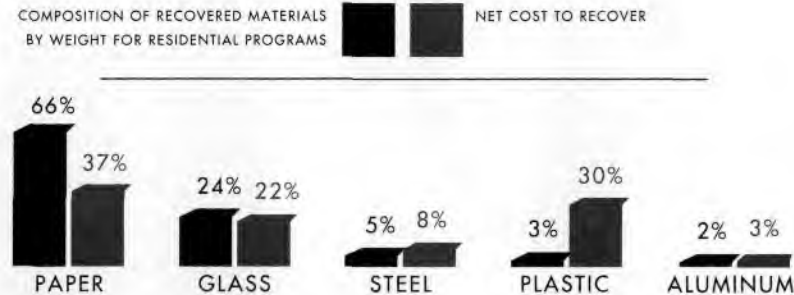
TOGETHER WE MUST CONSIDER WHAT TO RECYCLE AT WHAT COST

WMI recently surveyed curbside recycling programs across the U.S. to determine what it costs to collect household recyclables and sort the materials for sale to end-use markets.

WMI found that it costs between \$150 and \$200 per ton to collect and sort these materials. This yields an average cost of approximately \$175 per ton to collect and sort recyclables. Unfortunately, at current prices, the average ton of sorted recyclables is valued at only about \$40. This means the market value covers less than 25% of collection and sorting costs.

SOURCE: WMAA DATA. AVERAGE COSTS OF \$175/TON APPLIED TO ALL MATERIAL TYPES. MARKET PRICES FROM RECYCLING TIMES, 6/15/92

COMPOSITION OF RECOVERED MATERIALS BY WEIGHT FOR RESIDENTIAL PROGRAMS

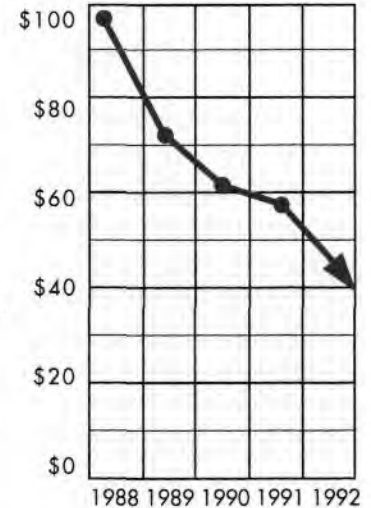


THE MARKET VALUE COVERS LESS THAN 25% OF COLLECTION AND SORTING COSTS

While the markets for commonly collected materials are currently in decline, even at five-year highs, glass newspaper and steel prices still would not have covered the cost of collecting and sorting these materials.

This difference between costs and revenues is covered by monthly surcharges to residents or by expending general municipal funds.

In the best of all worlds, we could collect and recycle all material types. However, we must deal with economic realities. As the demand for collection of additional material types increases, together we must consider what to recycle, at what cost to recycle, and how to improve markets for recyclables.



5-YEAR PRICE TRENDS FOR RECYCLABLE MATERIALS 1988-1992

BASED ON AVERAGE OF VALUES OF ALUMINUM, STEEL, GLASS, PET, HDPE, AND NEWSPAPER FOR EACH YEAR.

COST TO COLLECT AND PROCESS: \$175 PER TON



SOURCE: TONNAGE HISTORIES FOR RECYCLABLE MATERIALS PREPARED FOR WASTE MANAGEMENT, INC. DECEMBER 1991 BY RESOURCE INTEGRATION SYSTEMS, LTD. RECYCLING TIMES, AND RESOURCE INTEGRATION SYSTEMS, LTD.

THE NEED TO STIMULATE AND EXPAND MARKETS FOR RECYCLABLES

Today, over 40 states have recycling collection mandates. Most of these mandates require collection of recyclables, but they do not require that the materials be utilized again in products. But now, our desire to recycle is crashing head-on with economic reality. We have discovered that without markets for recyclable materials, it is not possible to "close the recycling loop." And when there are no markets, there is no recycling.

It would be unfortunate to spend precious resources on collecting and sorting materials only to find that no outlets exist. Developing sustainable outlets for collected materials is essential for closing the recycling loop. It is probable that, at least in the short term, traditional economic forces will significantly depress the value of virtually all recyclable materials. This is because our desire for recycling collection programs far exceeds our interest in purchasing products made from recycled materials.

To their credit, a number of consumers, businesses and government agencies have helped increase demand for processed recyclables. Now all of us must act to stimulate and expand markets for these collected materials.

Consumers, recycling service providers, product makers and government policymakers must establish and maintain a cooperative relationship in the search for way to develop markets for recycled materials.

**WHEN THERE
ARE NO
MARKETS,
THERE IS NO
RECYCLING**

PERSPECTIVES

In order to respond more effectively together to the challenges of recycling, it is important to understand what we expect from each other when it comes to recycling. The following sections outline several key concerns we have learned about recycling from the perspective of consumers, recycling service providers, product makers, and government.





A CONSUMER'S EXPECTATION OF RECYCLING SERVICE PROVIDERS

EXPECTATION

"AS WE PUT OUT LESS GARBAGE AND MORE RECYCLABLES, THE FEE WE PAY FOR THESE SERVICES SHOULD GO DOWN."

REALITY

Recycling service providers respond to the needs and desires of consumers. Recycling service providers can collect and process most materials. However, it is more cost-effective to recycle some materials than others. Consumers need to consider what expanded services they really want and how to pay for these services. As shown previously in the discussion of recycling economics, recycling does not pay for itself. Existing resources must still be used to collect whatever garbage remains after recycling programs are established, and additional trucks, facilities, and staff must be brought in to maintain the recycling programs. Volume-based fee structures may help to reduce the overall costs to a household, but recycling has a cost, and volume-based fee programs do not do anything to develop markets for recyclables to cover those costs.

CHALLENGE

Consumers must balance their demand for recycling services with a willingness to pay for these services. It is important for consumers to understand what recycling really costs. While WMI can help educate consumers by providing information on collection and processing costs and material values, it is up to consumers to decide upon priorities — which materials to collect, how much communities are willing to pay for recycling services, and how to pay for these services.



A CONSUMER'S EXPECTATION OF PRODUCT MAKERS

EXPECTATION

"PRODUCT MAKERS WILL REUSE THE MATERIALS WE ARE RECYCLING AT CURBSIDE BY INCORPORATING THOSE MATERIALS INTO NEW PRODUCTS AND PACKAGING."



REALITY

In many cases, it does not make sense to manufacture products using recycled materials — because of cost and quality differences between recycled and virgin materials, health regulations, technological barriers, and, perhaps most importantly, lack of consumer demand. Therefore, there is often little incentive for product makers to use recycled materials in their goods.

CHALLENGE

Recycling doesn't end at the curb. In order to stimulate markets and close the recycling loop, consumers must be willing to purchase products which contain recycled materials, even if they may currently cost a little more.

At the same time, product makers must design for recyclability. The goal of product makers should be to reduce costs to consumers for the purchase of recycled products. Together, we must share in the responsibility for maintaining and expanding markets for the materials we want to recycle.



A CONSUMER'S EXPECTATION OF GOVERNMENT

EXPECTATION

"GOVERNMENT WILL ESTABLISH LAWS TO PROTECT CONSUMERS. FOR EXAMPLE, WHAT IS WRITTEN ON A PRODUCT LABEL REGARDING RECYCLABILITY AND RECYCLED CONTENT MUST BE TRUE BECAUSE GOVERNMENT WOULD NEVER ALLOW CONSUMERS TO BE MISLED."

REALITY

There are no nationally accepted standards in place which govern recycling definitions. For the most part, product makers are not trying to mislead consumers with their environmental claims, but without a set of standards to follow, everyone must come up with their own definitions.

CHALLENGE

Consumers must urge their state and federal representatives to work toward the establishment of uniform standards and definitions regarding recycling. Consumers can also work together with recycling service providers, product makers, and government officials in the drafting of these standards to ensure that they are comprehensive and clear.



A RECYCLING SERVICE PROVIDER'S EXPECTATION OF CONSUMERS

EXPECTATION

"CONSUMERS WILL FAIRLY COMPENSATE US FOR THE RECYCLING SERVICE THAT WE PROVIDE, REGARDLESS OF MARKET CONDITIONS."

REALITY

As noted previously, it costs more to collect and sort recyclables than was ever anticipated. While we all expected the market values for recycled materials to increase or at least stay level over time, they have in fact decreased significantly, adding to the net costs of recycling services. Most consumers are not aware that the sale of materials pays for less than 25% of the cost of collecting and sorting them.

CHALLENGE

Recycling service providers must redouble efforts to maximize efficiencies and productivity while working with consumers to understand their recycling needs. Efficient recycling systems, together with strong demand for recycled products, can make recycling a winning solution for everyone. The best programs will enable recycling service providers, communities, and product makers to share in the risks and rewards of recycling.



EXPECTATION

"PRODUCT MAKERS WILL USE THE MATERIALS THAT RECYCLING SERVICE PROVIDERS COLLECT."

A RECYCLING SERVICE PROVIDER'S EXPECTATION OF PRODUCT MAKERS

REALITY

There are barriers to widespread reuse of collected materials — including economic, technological, and material-quality issues. Given current market conditions, in many cases it is more cost-effective for product makers to use, and for consumers to purchase, items made from virgin materials. Without cost benefits, there is little incentive for product makers to use recycled materials. Without incentives to use the materials, there is no incentive to collect the materials.

CHALLENGE

Recycling service providers and product makers must work together in the areas of material collection and processing to break down barriers on cost, technology, and quality. Recycling service providers and product makers must better understand these barriers and the trade-offs regarding material specifications that impact quality standards and price.



EXPECTATION

"GOVERNMENT WILL ENSURE THERE IS A DEMAND FOR THE RECYCLABLES THAT ARE COLLECTED, AS STATE AND LOCAL GOVERNMENTS ESTABLISH MANDATES THAT REQUIRE COLLECTION OF RECYCLABLES, THEY WILL ALSO DEVELOP REQUIREMENTS FOR THEIR USE."

A RECYCLING SERVICE PROVIDER'S EXPECTATION OF GOVERNMENT

REALITY

Collection rates are being established without corresponding requirements for use of the collected materials.

CHALLENGE

Recycling service providers must share their practical knowledge of recycling with government agencies and legislators, so that diversion programs can be designed with realistic goals, timetables, and costs. All levels of government — municipal, county, state, and federal — should establish policies which promote use of these materials, so that a better balance can be achieved between diversion and utilization.





A PRODUCT MAKER'S EXPECTATION OF CONSUMERS

EXPECTATION

"CONSUMERS WILL PURCHASE
THE PRODUCTS WE
MANUFACTURE FROM
RECYCLED MATERIALS."

REALITY

Too few consumers are demanding products with recycled content, and many are not willing to pay more for products made from recycled materials.

CHALLENGE

Product makers must attempt to minimize the cost difference between recycled-content and virgin products to improve consumer demand. Product makers must help increase the demand for products with recycled content by communicating directly with consumers the benefits of "buying recycled." By becoming part of the public policy process, product makers can help expedite more favorable positioning for recycled content products which in turn will increase consumer demand for these products.



A PRODUCT MAKER'S EXPECTATION OF RECYCLING SERVICE PROVIDERS

EXPECTATION

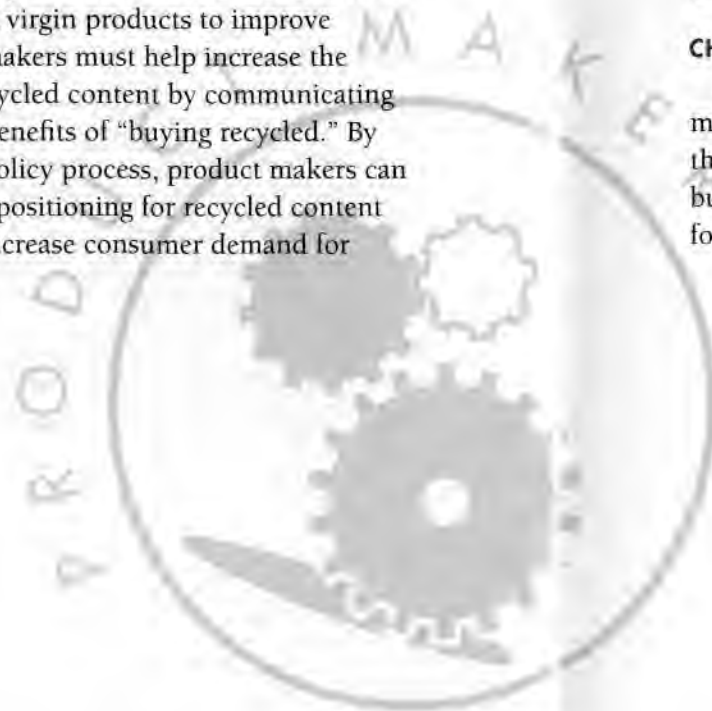
"ALL OF OUR PRODUCTS AND
PACKAGES SHOULD BE
INCLUDED IN CURBSIDE
RECYCLING PROGRAMS. IF
WE MAKE IT, YOU SHOULD
COLLECT IT."

REALITY

Recycling service providers can collect, sort, and process almost any material. However, each product and package, because of its material type, weight and volume, has its unique handling requirements, which determine the recycling costs.

CHALLENGE

Product makers must ensure that outlets exist for the materials they would like to see collected. If manufacturers want their material to be collected and recycled, they must commit to buying it back and reusing it, or to finding other market outlets for it.





A PRODUCT MAKER'S EXPECTATION OF GOVERNMENT

EXPECTATION

"GOVERNMENT WILL ALLOW
FREE MARKETS TO OPERATE
BY NOT OVER-REGULATING
INDUSTRIES."

REALITY

A free market environment does not exist given current recycling and diversion laws. For example, more than 30 states have restrictive product and disposal bans which favor certain industries and materials over others. Many states also mandate diversion of materials from the waste stream without corresponding requirements for their use. Such regulation does not promote a balanced approach to supply and demand.

CHALLENGE

Product makers need to bring their issues to the table and proactively address the inequities they perceive under current recycling regulations. Government must be willing to redress their legitimate concerns and change policies and regulations which stand in the way of market-oriented solutions to the recycling challenge.



GOVERNMENT'S EXPECTATION OF CONSUMERS

EXPECTATION

"CONSUMERS WILL
PARTICIPATE THROUGHOUT
THE RECYCLING LOOP —
FROM SEPARATING
RECYCLABLES FROM THEIR
TRASH TO PURCHASING
GOODS MADE WITH
RECYCLED CONTENT."

REALITY

Many consumers do not participate in recycling programs for various reasons. Those that do participate, however, think they are recycling by putting materials out at curbside, when in reality, this is only the first step in the recycling process.

CHALLENGE

All levels of government — municipal, county, state, and federal — must help elevate recycling in this country to the next level of efficiency and effectiveness. Recycling must be redefined for the consumer. Through extensive public education, consumers must come to understand the importance of both sorting materials carefully and buying them back as new products.





EXPECTATION

"RECYCLING SERVICE PROVIDERS CAN SOLVE MOST OF THE SOLID WASTE PROBLEM."

GOVERNMENT'S EXPECTATION OF RECYCLING SERVICE PROVIDERS

REALITY

Recycling is only a part of the integrated solid waste management equation. For the most part, government has been unwilling to take on the sensitive political issues required to create a truly integrated solid waste management system in this country. While recycling will continue to play a key role, source reduction, waste-to-energy, landfilling, and composting also must be considered. Recycling is only effective as part of an integrated solid waste strategy.

CHALLENGE

Together, we must pursue integrated approaches to waste management. Government must be realistic in its promotion of recycling as only a part of the solid waste management solution.



EXPECTATION

"PRODUCT MAKERS WILL INVEST THE NECESSARY FUNDS TO USE RECYCLED MATERIALS IN THEIR GOODS."

GOVERNMENT'S EXPECTATION OF PRODUCT MAKERS

REALITY

Currently, many product makers often lack both financial and marketplace incentives to invest in the new technology necessary to use recycled materials.

CHALLENGE

Government must work with product makers to determine the best means by which to foster the use of recycled materials. Such incentives may include tax credits, tax exemptions on the sale of recycled materials, or accelerated depreciation on capital investments needed to utilize recycled materials.

Furthermore, to the extent that government establishes diversion goals, government should also establish utilization policies to match these goals. By stimulating markets for recycled products, government will do its part in creating incentives for manufacturers to invest in new technology and equipment.



"Recycling in the 90s: A Shared Responsibility" has made clear that we must change the way we view recycling if it is to succeed in the future. We have laid out multiple conflicting outlooks and the resulting challenges.

If our country's environment is to benefit from recycling, then we must first improve the environment for recycling.

Simply put, recycling in North America is at a crossroads. Fundamental changes in recycling need to take place if an increase in recycling is to move beyond rhetoric to reality.



CONSUMERS

Consumers who want to see recycling succeed need to buy products with recycled content. Consumers need to understand that every pound of recycled material they place at their curbsides needs to be counterbalanced with the purchase of an equivalent amount of recycled content.



PRODUCT MAKERS

Product makers need to identify specific incentives to increase their use of secondary materials and develop an infrastructure that maximizes the use of such materials. Progressive organizations are already demanding recycled content for use in their retail products, and this effort must continue.



GOVERNMENT

Municipal, county, state, and federal government officials need to understand that national standards and definitions are essential for a successful recycling system. Furthermore, public policies that favor virgin materials over recyclables need to be re-examined. Municipal and state governments need to reorient public policy from the supply side to the demand side of the recycling equation. Public policies that further subsidize glutted material markets do nothing to further

advance recycling in this country — they hinder it. Finally, public sector procurement policies need to be tangible and performance-oriented.



SERVICE PROVIDERS

As the nation's largest collector and processor of recyclable materials, Waste Management will continue to offer the highest value of recycling services to our customers. To that end, we will:

- Increase the quality of recycled materials we deliver to the market.
- Promote improvements in collection and processing efficiencies and technology.
- Share our expertise with consumers, businesses, and the public sector alike to help make recycling a success in the 90s.

This document raises several of the critical issues facing the future of recycling in this country. Finding the answers will not be easy, and ultimately, is a shared responsibility. It is only through working together that we will be able to break old barriers and tackle the challenges to recycling's success. Waste Management asks that you join in making recycling work.



TO LEARN MORE
ABOUT HOW WE
CAN WORK
TOGETHER, PLEASE
WRITE TO:

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