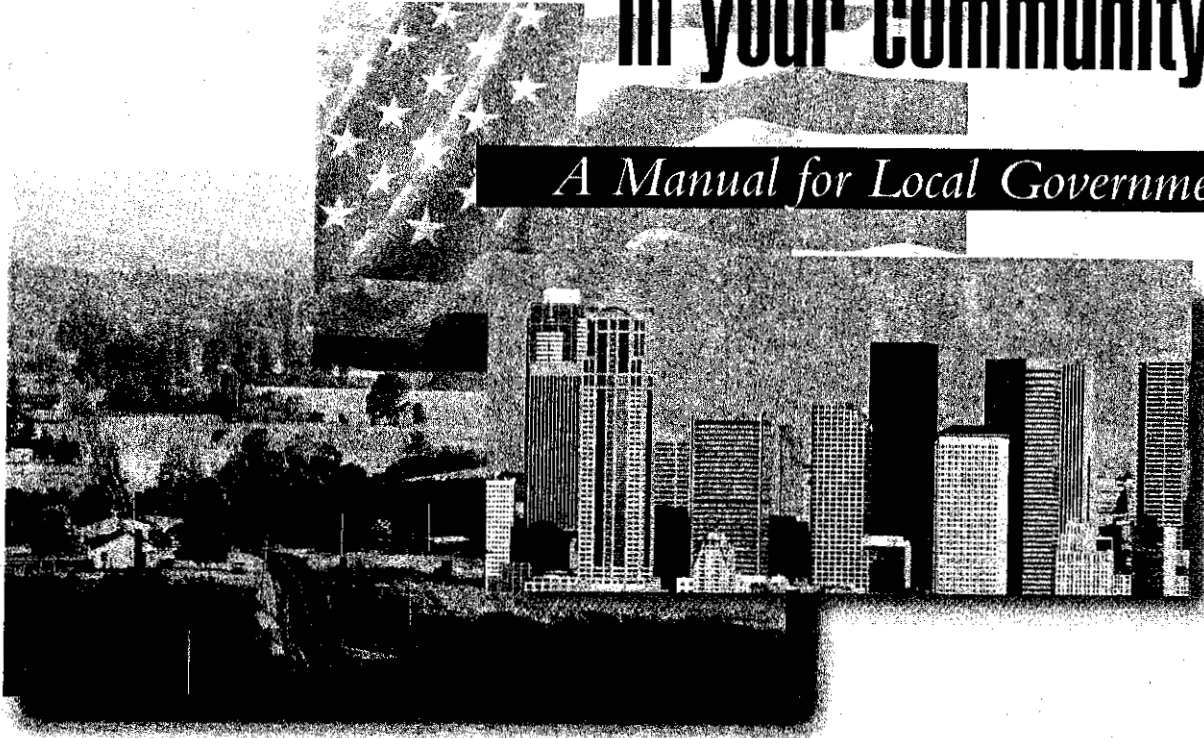


making source reduction and reuse work in your community

A Manual for Local Governments



published by the

Source Reduction Forum of the

National Recycling Coalition, Inc.



co-sponsored by



The Source Reduction Forum of the National Recycling Coalition

A program of the National Recycling Coalition (NRC), the Source Reduction Forum's goal is to conserve resources and reduce waste by:

- encouraging the efficient use of materials,
- developing and promoting source reduction and reuse strategies, and
- integrating these strategies with recycling.

The Forum is coordinated by a steering committee composed of national source reduction experts from commercial, government, university and non-profit sectors. Staff support is provided by the NRC. The information in this report should not be considered policy positions of the National Recycling Coalition.

Acknowledgments

NRC would like to thank Local Government Workgroup Chair **Naomi Friedman** of the National Association of Counties, and Workgroup members **Sally Boershig** of Sunshares, **Athena Lee Bradley** of the Knox County, Tennessee Solid Waste Division, **Joe Keyser** of the Montgomery County, Maryland Department of Environmental Protection, **Beth Graves** of the North Carolina Division of Pollution Prevention and Environmental Assistance, **Bruce Holland** of the National Surplus Exchange Program, **Hillary Johnson** of Lane County, Oregon Waste Prevention and Recycling, **Bill Lawrence** of IMEX-King County, Washington Dept. of Public Health, **Pat McClearn** of Colorado Hospitals for a Healthy Environment, **Brenda Platt** of the Institute for Local Self-Reliance, **Sandi Sturm** of The Energy Office, **Hetty Versteeg** of the Boulder Energy Conservation Center, and **Mark Wheeler** of the Dutchess County, New York Environmental Management Council for their assistance drafting this report. NRC also thanks **David Kleckner** of the City of New York Department of Sanitation, **David Sapphire** of INFORM, **Andy Duncan** of the University of Michigan, **Tony Kingsbury** of Dow Chemical, **Judy Sheahan** of the U.S. Conference of Mayors, and **Cynthia Sterling** of the Northeast Rural Community Assistance Center for their assistance reviewing and/or gathering information for this report.

And, of course, NRC would like to thank the approximately 90 communities that took the time to fill out our questionnaire and share their source reduction experience with us. This report could not have been written without their input.

This document was made possible with funding from the U.S. Environmental Protection Agency. The content of this document does not necessarily reflect the views and policies of the EPA.

About the Co-Sponsors

The **National Association of Counties (NACo)** is the only national organization that represents county governments. Established in 1935, NACo's goals are to improve county government, act as a liaison with other levels of government, present the county position on national issues, and assist counties in helping their citizens achieve a better quality of life.

The **United States Conference of Mayors** is a national association of city governments, each represented by its chief elected official, the Mayor. Through the Conference, the nation's larger cities, with populations of 30,000 or more, share experiences and cooperate to meet the challenges of urban leadership.

National Recycling Coalition, Inc.

1727 King Street, Suite 105, Alexandria, VA 22314-2720
703/683-9025 Fax: 703/683-9026

making source reduction and reuse work in your community

A Manual for Local Governments

published by the

Source Reduction Forum of the
National Recycling Coalition, Inc.



NATIONAL
RECYCLING
COALITION
INC.



co-sponsored by



Preface

In early 1996, the Source Reduction Forum of the National Recycling Coalition (NRC) began an assessment of local governments' solid waste source reduction activities. The Forum's Local Government Workgroup established several goals for this work:

- to determine how many local governments were pursuing source reduction activities;
- to identify the type of local source reduction programs being implemented;
- to evaluate the experiences of pioneer programs and provide guidance to other local governments on integrating source reduction into their solid waste management programs.

To further these objectives, the workgroup distributed a two-page questionnaire to hundreds of local governments through a variety of networks and organizations including NRC's State Recycling Organizations, the National Association of Counties, and the U.S. Conference of Mayors/Municipal Waste Management Association. Much to our surprise, the workgroup discovered that source reduction was more widespread on the local government level than previously thought. More than 90 communities around the country returned questionnaires describing their source reduction initiatives.

This report highlights the experiences of many of these communities. This document is highly valuable to any community wanting to start similar efforts, as well as to policy makers and community leaders hoping to better understand the opportunities for source reduction and reuse at the local level. If your community is not featured in Appendix I of the report, please fill out the case study template in Appendix II and fax it to the NRC at 703/683-9026.

Table of Contents

Chapter I	Introduction	1
	What is Source Reduction?.	2
	What are the Benefits of Source Reduction?.	2
	What Role Can Local Government Play?.	2
	Future Directions.	3
Chapter II	Lessons Learned from Pioneering Programs	5
	Challenges to Overcome	5
	Tips for Planning and Implementing a Source Reduction Program	6
Chapter IV	Case Studies	13
	<i>In-House Source Reduction Programs</i>	15
	Overview	15
	Albemarle Regional Solid Waste Management Authority, NC	16
	Dunn County, WI	17
	Kalamazoo County, MI	19
	<i>Policy Options and Incentive Programs</i>	21
	Overview	21
	Tompkins County, NY	23
	City of San Jose, CA	24
	Arlington County, VA	26
	<i>Education Programs for Residents</i>	29
	Overview	29
	Trinity County, CA	30
	Pinellas County, FL	32
	San Francisco Bay Area, CA	33
	Hillsborough County, FL	34
	<i>Education and Technical Assistance Programs for Businesses</i>	37
	Overview	37
	Snohomish County, WA	38
	City of Austin, TX	40
	Mecklenburg County, NC	41
	Dutchess County, NY	43
	<i>Materials Salvage, Reuse and Exchange Programs</i>	45
	Overview	45
	SEMREX, Rochester, MN	47
	City of New York, NY	49
	Chatham County, NC	50
	of Seattle, WA	52
	<i>At-Home Composting and Grasscycling</i>	53
	Overview	53
	City of Glendale, CA	55
	Southern Idaho Solid Waste, Burley, ID	56
	Montgomery County, MD	58
	Western Lake Superior Sanitary District, Duluth, MN	59
Appendix I	Chart of Local Government Source Reduction and Reuse Programs	60
Appendix II	Source Reduction and Reuse Program Questionnaire	69

introduction

In 1989, the U.S. Environmental Protection Agency (EPA) unveiled a strategy designed to improve the nation's management of municipal solid waste (MSW). Seven years later, the principles of "integrated waste management" are quite familiar to local officials. However, one component of solid waste management, which is often termed the pre-

ferred strategy, has received little attention. Source reduction, or the prevention of waste at the source of generation, requires local governments to tread in unfamiliar territory and look beyond the traditional duties of collecting and processing materials.

Yet, as the Source Reduction Forum of the National Recycling Coalition (NRC) has discovered, in a

Popular Local Government Source Reduction Programs

On the local level, source reduction programs can take different forms.

- **In-house programs** to encourage governmental agencies to reduce the volume and toxicity of the waste they produce;
- **Policies and economic incentives** that require/encourage consumers and businesses to reduce waste generation;
- **Educational efforts** that encourage consumers to purchase goods that are less toxic, more durable, reusable, and/or have less packaging, and to participate in community source reduction programs;
- **Educational and on-site business assistance programs** that advise businesses how to use materials more efficiently, conserve resources and reduce waste generation;
- **Salvage and reuse programs** that divert materials from recycling and waste collection systems and, by extending the useful life of products, reduce the total number of products consumed;
- **Backyard composting and "grass-cycling" programs** that encourage the management of yard trimmings and leaves at the source of generation, thereby reducing the volume of material entering the collection system.

growing number of cities and counties, source reduction is playing an increasingly prominent role. Programs to reduce and reuse waste materials can be an effective way to reduce upfront costs for material purchases, as well as the amount of waste a locality and its haulers must collect, process, and dispose. While recycling and composting systems assist communities in substantially reducing the volume of solid waste disposed, source reduction reduces the total amount of waste generated by improving the efficiency of how we use materials.

How can local governments play a more active role in pushing the nation toward a front-end, preventative approach to waste generation? What type of source reduction programs are appropriate to implement on the local level? What kind of results can one expect? This report helps answer these questions and will assist local governments in better integrating source reduction into their solid waste management strategies.

What is Source Reduction?

Source reduction means “waste prevention” or the reduction of the amount and/or toxicity of waste at or before the point of generation. Source reduction occurs during the design, manufacture, purchase and use of products and materials, and includes strategies that use less material per product (e.g., lightweighting), extend the useful life of products and materials, and reduce overall waste generation. **Reuse** is using an item for a similar or identical purpose to avoid waste generation. Because reusing items delays or avoids their entry into the waste collection and disposal system and reduces the total number of products consumed, reuse is included in our discussion of source reduction.

While source reduction initiatives have largely focused on waste minimization efforts on the manufacturing level, local governments also can play an important role in advancing source reduction goals. Local government can affect the content and volume of the wastestream through their influence over consumer choice and the management of materials. Popular local government source reduction programs are described on the previous page.

What Are the Benefits of Source Reduction?

Source reduction offers numerous benefits both to the community and to society in general by reducing the generation of municipal solid waste.

According to the U.S. EPA, waste generation rates are on the rise. In 1994, the United States generated a total of 209 million tons of solid waste. This reflects an increase of 3 million tons of waste from the previous year. Worth noting, however, is that while overall waste generation rates increased, per capita rates remained constant at 4.4 pounds per person per day. This is a reversal of a multi-year trend in which per capita rates were steadily rising and is largely due to local efforts to keep yard trimmings out of the waste management system through “grasscycling” and backyard composting.¹ After the year 2000, the amount of yard trimmings diverted from disposal is expected to plateau, and per capita rates are expected to rise again to an estimated 4.8 pounds per person per day by the year 2010. According to the U.S. EPA, “achieving a decline in overall waste generation after 2000 hinges on continued emphasis on source reduction of all municipal solid waste.”²

In addition to reducing the burden on local waste collection and disposal systems, source reduction saves valuable natural resources. The manufacture and consumption of products have numerous environmental impacts, including disturbing large tracts of land through mining and extracting raw materials (such as timber, bauxite, and petroleum), and producing large volumes of industrial and manufacturing waste. In addition to reducing the adverse environmental effects of the production and disposal of products, using material resources more efficiently can lead to substantial energy savings as well.

On the local level, communities embarking on source reduction programs realize many of the following benefits. Source reduction programs can:

- save money for local governments through reduced purchases;
- reduce the amount of waste requiring collection and related costs;

¹ EPA estimates that quantities of yard trimmings and leaves in MSW will be reduced by approximately 8 million tons nationally between 1994 and the year 2000, due to the banning of yard trimmings from disposal facilities in some states. U.S. Environmental Protection Agency, *Characterization of Municipal Solid Waste in the United States: 1995 Update*, p. 3.

² U.S. EPA, *1995 Update*, p. 10.

Local Government Opportunities To Advance Source Reduction

- implementing source reduction programs in-house, within local government facilities and operations;
- passing a policy ordinance or regulation targeted at retailers, businesses, or individuals that encourages the reduction of a particular material or that bans material from collection or disposal;
- providing economic incentives targeted to residents and businesses;
- educating businesses and consumers about general source reduction goals and specific source reduction behaviors;
- establishing a source reduction or reuse program, including a salvage/reuse center, a comprehensive backyard composting program, or an on-site technical assistance program for local businesses;
- conducting or sponsoring research focusing on source reduction, including pilot studies that serve as models for the community;
- forging alliances or partnerships with other groups to initiate programs or to support federal and state policies encouraging source reduction and the efficient use of materials.

- reduce the tonnage and cost of waste requiring disposal, and extend the useful life of landfills;
- lessen the tonnage of yard trimmings for processing in a centralized composting facility;
- provide local businesses a service that helps them save money;
- create a public awareness campaign that involves the whole community.

into its efforts to promote source reduction. Please fill out and return the attached questionnaire (Appendix II) if your community is not featured in the chart at the end of this document (Appendix I). The Forum will continue to compile examples of local government source reduction programs nationwide and serve as a clearinghouse to make this information available.

What Role Can Local Governments Play?

Source reduction requires individuals, businesses, and government agencies to change both their attitude and behavior regarding the use and disposal of materials. Local governments have a variety of powers to help move their community toward these goals. These are described in the box above. Concrete examples of these source reduction options are provided in this report.

The Source Reduction Forum hopes this report will stimulate discussion among local officials and help guide further development of local source reduction efforts. The Forum is eager to learn about new and emerging programs and incorporate these programs

Future Directions

As the case studies in this manual demonstrate, there is no "cookie cutter" approach to source reduction; rather, local governments can choose a variety of ways to successfully incorporate source reduction and reuse into their waste management programs. And, as these programs indicate, source reduction will provide substantial benefits both to the communities and to the environment.

However, in order for cities and counties to effectively move forward with source reduction initiatives, they need to make a commitment to include these programs in their integrated waste management plans. Source reduction needs to be a priority, otherwise other programs, with perhaps more immediately visible benefits, will prevent the adoption of such initiatives.

Communities should be willing to devote at least some staff time and monetary resources to the development of these programs. While source reduction and reuse can end up saving a community money, often an initial investment in staff time, materials, waste audits or other programs must be made, as

True source reduction will only occur as a result of a dedicated partnership among those that manufacture goods, those that use goods, and those that manage discarded goods.

with any other public service.

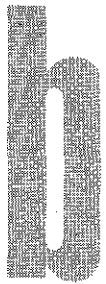
In addition to actions that local governments can take, state government plays an important role in helping or hindering communities from moving ahead with source reduction initiatives. For

example, states can ensure that communities get credit toward recycling goals for source reduction achievements. States also can assist local initiatives by

providing seed money to get source reduction initiatives off the ground. And in many instances, states are an excellent source of educational information and technical assistance.

The private sector plays perhaps the key role in moving the nation forward in reducing the generation of waste at the source. Local governments depend on the cooperation and support of local companies for the implementation of many source reduction initiatives. In addition, the efforts of the private sector to lightweight products, reduce packaging, and use refillable, reusable, and durable materials directly affects the volume and composition of the wastestream that communities must manage and pay for. Local governments can help educate consumers to use their power in the marketplace and create demand for source reduced products. Local government also can use their own purchasing power to encourage industry to pursue source reduction practices. True source reduction will only occur as a result of a dedicated partnership among those that manufacture goods, those that use goods, and those that manage discarded goods.

lessons learned from pioneering programs



By studying the experiences of communities with pioneering programs, one can learn a great deal about the opportunities and challenges of source reduction. These lessons are invaluable to other communities considering the implementation of similar programs. Many of these lessons are summarized below.

challenges to overcome

While communities have met with considerable success when implementing source reduction and reuse programs, they also have encountered a number of challenges. The following list describes the common obstacles encountered.

Education/Awareness Barriers

- lack of public awareness about what source reduction is;
- lack of awareness by citizens, local governments and businesses of source reduction and reuse program options;
- traditional focus on “end-of-the-pipe” solutions;
- traditional mindset that more (or newer) is always better.

Economic Barriers

- lack of staff and financial resources to operate programs;
- financing of solid waste management through “tipping fee” revenue from disposal sites, which

- may be negatively impacted by reduced waste volumes;
- lack of resources and staff time for businesses, especially small ones, to research source reduction strategies;
- low cost of municipal disposal tipping fees in some areas;
- “put or pay” contracts that require a certain amount of waste flow and/or revenues in order to finance facilities;
- lack of economic incentives to consumers to change purchasing practices (as environmental costs are not factored into a product’s price).

Administrative Barriers

- difficulty measuring progress and success;
- lack of historical data because many source reduction programs are new;
- traditional accounting methods that do not favor

- long-term savings (e.g., savings from switching to long-lasting lightbulbs) or factor in the full costs of waste management programs;
- restrictions by another governmental agency that may provide obstacles to the adoption of source reduction or reuse activities (e.g., the Seattle Health Department requires that active material exchange programs be housed in a separate building with dedicated staff and additional parking as opposed to a browse/pick operation at a household hazardous waste event);
- liability issues about items handled (e.g., hazardous materials) at reuse centers.

Policy/Regulatory Barriers

- current programmatic and legislative emphasis on recycling diverts attention away from source reduction;
- regulatory focus on “end-of-the-pipe” solutions and lack of attention to prevention;
- federal subsidies for extraction, refining, and energy use that encourage use of virgin materials and discourage efforts to reduce resource consumption and waste generation;
- lack of policies and incentives to promote source reduction both in-house within government facilities and in operations throughout the community;
- lack of political support.

tips for planning and implementing a source reduction program³

Drawing on the experiences of the communities studied, the following section provides a step by step approach to implementing source reduction at the local level. This section also highlights the major case study findings.

Steps for Implementing Source Reduction

- ❑ 1. Set a Source Reduction Policy with Specific Goals
- ❑ 2. Set Priorities
- ❑ 3. Secure Staffing
- ❑ 4. Identify Budgetary Resources
- ❑ 5. Gain Support
- ❑ 6. Establish Partnerships
- ❑ 7. Implement the Program
- ❑ 8. Monitor and Evaluate Results

³ Much of this text was adapted from *Source Reduction: A Guide for North Carolina Local Governments and Solid Waste Professionals*, 1995, available from the North Carolina Recycling Association 919/851-8444, and from *Making Less Garbage: A Planning Guide for Communities*, Bette K. Fishbein and Caroline Gelb, 1992, available from INFORM, Inc. 212/689-4040. INFORM has also published *Local Lessons in Source Reduction: A Look at Six Planning Units in New York State*.

1. Set a Source Reduction Policy with Specific Goals

A clear statement of policy is a good first step in planning for source reduction and elevating waste prevention to an important priority. The policy should state explicitly that the aim is source reduction, and should include a clear definition of source reduction. NRC has defined source reduction and a number of related terms and encourages use of these definitions by the recycling industry and communities to achieve greater standardization.

The policy also can specify goals and how the success of the initiative will be measured. Setting specific source reduction targets can play an important role in

spurring community-wide source reduction activities. Source reduction goals should be readily distinguishable from waste reduction or recycling goals so that attention (including staff time and budget) is concentrated specifically on reducing waste generation. For example, New York City and Dunn County, WI, have set goals to reduce the total municipal solid waste stream - New York City by 8 to 10% and Dunn County by 15%, both by weight. Because waste generation rates serve as the denominator of the waste recycling equation, source reduction also can help communities meet recycling goals.

Things To Consider When Setting Source Reduction Goals

Baseline and Target Years

Source reduction goals have little meaning unless a community decides the date by which the goal will be achieved, the baseline year to which it will be compared, and establish a way to measure progress toward the goal.

Measurement Methods

Communities should decide how progress toward the goal will be measured. Will it be a reduction from current total waste generation levels, a reduction in per capita waste generation, or a reduction from a projected increase?

Specified Wastestream

It also is important to identify the wastestreams to be reduced, the waste generators, and the materials involved. Should there be separate goals for the residential, commercial, institutional and industrial sectors? Should there be separate goals for different materials, such as paper, metals, glass, plastic and organics? In some cases, individual buildings or industries may set their own source reduction goals.

2. Set Priorities

A full assessment of the composition of the wastestream will help communities set realistic goals and identify source reduction priorities. Communities should target materials that comprise a major portion of the wastestream, are difficult to recycle, are easy to reduce, or have a significant negative environmental impact. Also, consider targeting generator groups to

reduce specific materials. For example, office buildings may be targeted to reduce paper consumption. A source reduction program can focus on an area of particular local concern, such as reducing the mercury content of waste. Because organics can be a large portion of the wastestream, they are a worthwhile focus of a source reduction program.

3. Secure Staffing

Communities should be creative when setting up a program, as local governments often operate with very limited budgets and staff. A community may want to hire a source reduction program coordinator to oversee the program, or allocate these responsibilities to existing staff. Recycling staff who already have an educational focus are typically suitable and can take advantage of their established relationship with citizens and businesses.

Diverse skills are needed to work on planning, program development, technical assistance, evaluation and

enforcement. The coordinator will help set priorities, gain support for the program, and ensure program implementation.

It is important that all solid waste staff be fully educated about source reduction, and incorporate source reduction into existing business waste audits/training, civic presentations and school presentations. Volunteers also can be used to help implement the program, as is common with Master Composter Programs (where members of the community are trained to teach others about the benefits of composting).

Integrate Source Reduction and Reuse with Recycling

Many respondents to the Forum's questionnaire noted the tension between building support for recycling and encouraging source reduction. Often, cities and counties focus on meeting state recycling goals, receiving state grant funds (which are often tied to meeting recycling goals), and fulfilling citizens' interest in recycling. Thus, source reduction becomes a low priority. States can play a more active role in encouraging source reduction by ensuring that waste reduction goals give credit for source reduction achievements, and that grant awards encourage source reduction activities.

In many communities, source reduction has actually grown out of successful recycling programs. As local governments begin to master the recycling field, they can shift staff into source reduction duties. While clearly communicating the difference between the two activities is important, piggybacking source reduction programs onto already successful recycling efforts is a good approach. For example, communities can look for source reduction opportunities when performing on-site assessments and recycling-related outreach to local businesses.

4. Identify Budgetary Resources

Although source reduction may not require the collection and processing operations of other waste management options, it cannot be accomplished without adequate resources. Source reduction costs may include an up-front investment in data collection, waste audits, education (e.g., materials, flyers, pamphlets, posters, guides), technical assistance, and planning. Since the payoff for investment in source reduction may not be immediate, understanding the long-term nature of source reduction programs is critical.

Communities have found a variety of ways to fund their source reduction programs. These include:

- resources from the general fund;
- a designated income stream, such as a portion of the funds raised from quantity-based user fees or charging waste service fees to haulers;
- disposal tipping fees or garbage disposal rates;
- environmental taxes or fees;
- un-redeemed beverage container deposits;
- a percentage of the recycling budget;
- in-kind donations from businesses;
- grants from the federal or state government to help start or expand programs; and
- piggybacking onto agricultural extension programs or household hazardous waste initiatives.

Cost savings from source reduction programs can be used to supplement waste prevention program funding. In some cases, such as salvage and reuse operations,

communities utilize volunteers to staff operations, which lowers overall operating costs. University students and programs also can be solicited for assistance.

The potential for a conflict of interest exists among source reduction and funding for recycling and MSW management. Because source reduction reduces the amount of material recycled and disposed, it can reduce revenues from sales of recyclable materials and from landfill tipping fees. For this reason, dedicating resources to source reduction is key, as is ensuring that staff members focused on source reduction collaborate with colleagues who promote recycling. Overall,

potential conflicts between source reduction and recycling may be minimized through integrated solid waste management planning and budgeting.

Some of the communities featured in this report have received grants or other assistance from their state to help start their source reduction program, though, in many states, grant money is more widely available for recycling programs than source reduction. State grant money can help “jumpstart” source reduction efforts; however, communities should ensure they do not become dependent on this money, but rather become economically self-sufficient as soon as possible.

5. Gain Support

Because the public is largely unaware of the value of source reduction and how such ideas can be put into practice, a targeted and comprehensive education program is critical to the success of any waste prevention effort. Educating residents and businesses about a program’s goals, operation, and results can be vital to gaining support for such initiatives. Education programs should be targeted at residents, businesses, as well as government officials so that waste prevention is seen as a top priority.

Residents:

Residents should be informed that source reduction presents cost savings opportunities as well as larger environmental benefits. For example, a grasscycling program reduces the collection and processing costs of handling yard trimmings at a large-scale composting facility. Grasscycling can reduce the need for fertilizers by one-third, thereby saving residents direct out-of-pocket expenses. Source reduction programs also may reduce annoyances to residents, such as a

junk mail reduction program.

Local Businesses:

Local governments can educate businesses about how source reduction helps them gain a competitive advantage through lower costs for purchasing, processing, and storage of products and disposal of waste. Local governments can draw positive attention to businesses that reduce waste through award or recognition programs.

Local Officials:

The support of elected officials and professional staff has been key to the success of many source reduction programs. These important stakeholders need to understand the benefits of source reduction, including the potential cost reductions through better purchasing, reduced expenditures on raw materials, and avoided collection and disposal costs. Finding an elected official to act as a “champion” for source reduction as a cost saving measure can be very effective for advancing the program.

The Importance of Language

The language used in an outreach effort is critical to gaining acceptance of source reduction concepts and behaviors. Some communities have had particular success with a readily understandable and catchy slogan such as “Use Less” or “Waste Free Fridays.” Language is particularly important when working with an individual company or industry whose operations and design might warrant use of trade-specific terms or language that emphasizes economic savings. In some instances, calling source reduction “waste prevention” or linking the program to a popular local issue may be appropriate. Conducting a survey or assessment to determine the key concerns/ interests of your target audience will help you better focus your educational program.

6. Establish Partnerships

Because solid waste source reduction spans the interests and responsibilities of different segments of the community, local source reduction efforts are often collaborative in nature. Frequently, a variety of governmental agencies (such as the solid waste department and the economic development office), will join with community organizations and private sector entities to push a project forward. Through these partnerships, city and county governments can more effectively carry out their source reduction initiative and reach their target audience.

Successful partnerships on the local level include:

- formation of a source reduction task force that includes representation from government, business, civic organizations, and citizens to plan and monitor **community-wide source reduction initiatives**;
- collaboration among different governmental agencies;
- financial or in-kind support from non-profit or private sector organizations;
- collaboration between city and county governmental agencies;
- collaboration between the local government and the chamber of commerce;
- partnership projects with local businesses and manufacturing companies;
- partnerships between local government and state extension offices, universities, other non-profit organizations and businesses.

7. Implement the Program

Source reduction initiatives range in scale from community to community. Some cities and counties will launch a community-wide, full-scale initiative with significant resources, while others start more slowly, taking small steps to incorporate source reduction and reuse into an existing program. Because source reduction is

new, some communities recommend that you do not overwhelm your audience with too many programs or messages at once, but rather begin very targeted programs and slowly expand into different areas. Communities should not expect success overnight, but should be patient as the program develops and matures.

8. Monitor and Evaluate Results

Many communities have found measuring source reduction accomplishments quite challenging, and even the communities that are farther along continue to grapple with this issue. Nevertheless, local government officials are making progress in refining their ability to document the value of their program, with the intent of continuing to win support for pursuing these efforts.

Communities have found a variety of both quantitative and qualitative ways to measure the results of their programs.

Quantitative Evaluation

Because source reduction causes waste to “disappear” it cannot be as easily measured as recycling programs, whose success can be measured in tons or percentage recovered. In many cases, source reduction can only be measured by comparing the amount disposed before source reduction to the quantity disposed after program implementation, and even this can be skewed at times. Some communities have successfully measured waste reduced through salvage and reuse programs as well as backyard composting efforts. For example, communities track tonnage diverted by backyard composting and grasscycling programs through pilot studies and waste composition studies, comparing current rates for yard trimmings generation against past rates.

Communities can measure reduction from a baseline year or from a projected increase in waste generation. For example, a community can specify whether a goal of 10% from 1990 to 2000 means a 10% reduction from the 1990 baseline amount or a 10% reduction from the amount of waste projected for 2000.

Collecting data on a monthly basis will help communities better understand the dynamics of their wastestream. Accurate, up-to-date data kept over time will reveal important trends and allow local governments to more accurately project future waste generation.

Communities should consider collecting the following types of data:

- Amount of total residential waste stream by weight or volume (including recyclables and municipally collected compost);
- Amount of commercial and institutional waste by weight or volume (including recyclables and municipally collected compost);
- Residential population;
- Total employment;
- Types of businesses in the community (e.g., SIC codes);
- Projections of population change;
- Indicators of economic activity.

Communities may encounter problems obtaining this information or using it to measure source reduction. Five common problems are:

- Distinguishing changes in the overall rate of waste generation from changes in number of people or other units generating waste⁴.
- Factoring out external variables, such as economic factors and the business cycle.
- Discerning small annual changes when measured by imprecise waste generation data.
- Separating data for residential and commercial/industrial waste.
- Reconciling waste generation data since as measurement techniques improve, earlier baseline measurements may be inaccurate.

Keep in mind that external variables can affect waste generation and cannot be considered source reduction. Some examples include seasonal variations in yard trimmings, behavioral changes due to the weather (e.g., more beverage cans during hot weather), and decreased waste generation because of an economic recession. The effects of these variables can in some cases be factored out by careful calculation.

Two percent might be a substantial source reduction achievement for one year, but a variation of 2% is well within the margin of error in measuring waste generation. To compensate for this, measuring source reduction over longer periods of time is necessary.

⁴ For residential waste, the generating unit is population or number of households. For commercial waste, generating units can be established for each generating sector, e.g., number of staffed beds in a hospital, number of workers at a business, or number of students at a school.

For example, if the economic activity in the area is affecting waste generation, the total waste generated divided by wage dollars will yield pounds per wage dollar, which can be used as a basis for comparison.

Annual reductions in waste generation, if they occur, are likely to be small and can be difficult to detect. Two percent might be a substantial source reduction achievement for one year, but a variation of 2% is well within the margin of error in measuring waste generation. To compensate for this, measuring source reduction over longer periods of time is necessary.

Another quantitative way to measure the benefits of source reduction is through a cost comparison. For example, an individual business or institution can record monetary savings, from year to year, in relation to avoided disposal and/or purchasing costs. Businesses also should keep track of the money spent on source reduction activities for a sense of net savings.

Qualitative Evaluation

A qualitative evaluation often can be an appropriate assessment tool for local government in order to answer the following questions:

- How many residents or businesses participated in the program?
- Why did they or did they not participate?
- Was there increased participation in other programs

(e.g., composting or recycling) because of the outreach conducted on source reduction?

- Did businesses or residents make changes in purchasing habits?
- Were there other behavioral changes made, such as bringing a reusable mug for take-out coffee or canvas bags for shopping?
- How can the program be improved?
- What changes could be made to increase public awareness?
- How many businesses received waste assessments? How many made improvements as a result of the waste assessment?
- How many workshops were held? Who attended? What did attendees learn? Did they put any of the lessons into practice?

Changes in attitudes or behavior can be assessed through surveys. However, be aware that people tend to overestimate their involvement and can give misleading answers. The bottom line for any source reduction program is the amount of waste the program or activity has eliminated and the cost savings realized. These amounts can only be quantified by calculating the amount of waste being generated or dollars spent prior to source reduction efforts and comparing them to baseline data.

case studies

The following chapter presents some exciting and innovative examples of source reduction programs in place around the country. As these case studies and the chart of programs in Appendix I indicate, communities are boldly moving forward to incorporate source reduction and reuse as alternatives to traditional waste management programs. To assist the reader, the case studies are arranged in the following sections, based on the most popular types of programs, and to address different segments of the wastestream.

Each group of case studies begins with an overview of program options for that category. The overview includes a discussion of different options, lessons learned as reported by the communities studied, and examples of successful programs. As this compendium demonstrates, educational programming, at home composting, and salvage/reuse programs are the most common efforts. However, a growing number of communities are expanding their programs to include on-site technical assistance, economic and policy incentives, and internal source reduction policies. With more than 90 communities included in Appendix I, it is clear that source reduction is gaining more recognition by local governments as a legitimate approach to reducing their solid waste generation; however, source reduction is far from reaching its potential at the local level.

- **In-House Source Reduction Programs**
- **Policy Options and Incentive Programs**
- **Education Programs for Residents**
- **Education and Technical Assistance Programs For Businesses**
- **Materials Salvage, Reuse and Exchange Programs**
- **At-home Composting and Grasscycling Programs**

section I

in-house source reduction programs overview

Local governments can lead by example. Cities and counties own and operate numerous buildings, disposal facilities, fleets, schools, hospitals, correctional facilities, and offices. They also purchase supplies. In this capacity, local governments are a generator of waste. There are numerous ways that local governments can reduce the volume and toxicity of the waste they generate while also serving as a model to the community. Listed below are a few noteworthy examples.

Program Types:

- **Source reduction policies** directed at in-house government operations, such as establishing internal waste reduction targets;
- **In-house source reduction task forces or planning committees;**
- **Source reduction and reuse in offices,** such as an office paper reduction program;
- **Source reduction in governmental facilities and operations,** such as hospitals and schools;
- **Procurement programs** that favor source reduction and reuse.

Lessons Learned:

- Set waste reduction goals and targets to help focus the internal source reduction initiative.
- Pass a formal waste reduction policy and gain the support of elected officials to legitimize internal source reduction activities.
- Establish an internal task force or "brainstorming" group, composed of representatives from a number of local agencies, to plan and generate support for source reduction. This will help empower staff to carry out the program activities.
- Educate all department personnel about the program since some may resist participating if they do not understand or believe in the program's objectives.
- Consider selecting an internal staff person as coordinator of the program as this person can use established relationships with staff and knowledge about the office's potential to reduce waste to help the program succeed.

- Produce an internal source reduction newsletter or written update to help maintain continued interest in and support for the program.
- Share experiences with other local governments.

Program Examples:

- Building on an earlier Mayoral Directive on waste prevention for **New York City, New York** agencies, a new directive is anticipated in 1996 that includes a range of waste prevention measures required by city agencies. The new directive also will address procurement, utilization of the city's program to exchange surplus goods between agencies, paper consumption, yard trimmings reduction, creation of an inter-agency task force, and other measures intended to help the city save money while reducing waste generation.
- An internal waste reduction committee was established by **Kalamazoo County, Michigan**, with representation from all county departments involved with the program. This inter-departmental coordination has encouraged employee participation, and a written quarterly report has proven to be a good way for departments to compare their accomplishments and measure their success.
- **Dunn County, Wisconsin**, set a goal to reduce the quantity of recyclable and nonrecyclable waste generated by government offices and operations by 15% by weight over a one year period. They met this goal by making a variety of relatively simple changes in their Health Care Center, Highway Department, and other operations.
- The **New York City** Department of Sanitation has an in-house program that has reduced tire discards from its truck fleet by more than 50%. Over a four-year period, the department has salvaged more than 11,000 tires for reuse. The Department of Sanitation's four-block long Central Repair Facility is responsible for inspection, maintenance and repair of tires from sanitation vehicles, including from the city's 2,000 trash and recycling collection trucks.

case study 1

.....
 in-house source
 reduction programs

▼
 The in-house
 program saves
 approximately
 \$4,000 annually
 and diverts
 five tons from
 entering the
 wastestream.

Albemarle Regional Solid Waste Management Authority, North Carolina

Population: 85,000

Type: Rural. Authority is comprised of seven rural Northeastern North Carolina counties and 10 municipalities therein.

Contact: Jerry Parks, Director; Anne Blindt, Recycling Coordinator, Rt. 1, Box 152 C, Belvidere, NC 27919, (p) 919/297-3300; (f) 919/297-3307.

Goal/Impetus:

The state of North Carolina has a per capita solid waste reduction goal of 40% by the year 2001. The North Carolina Division of Pollution Prevention and the Environmental Assistance (DPPEA) offers grants to local governments for waste reduction programs that assist with attaining this goal. The Authority, geographically the largest legal solid waste entity in North Carolina, was formed to address the regional planning and infrastructure needs necessary to solve the region's solid waste management problems.

Strategy:

The overall source reduction strategy of the Authority is to make everyone in the region more aware of their impact on the solid waste stream and how the toxicity of their waste affects the environment. The Authority accomplishes this through in-house programs in schools and government offices, as well as community-wide educational programs and paint swaps.

The following in-house programs have been implemented at the office the Authority shares with the tri-county Perquimans, Chowan, Gates Solid Waste Management. This program has resulted in the annual diversion from landfill disposal of at least 5 tons of pallets plus other materials, saving approximately \$4,000 annually.

Program components include:

- Reusing manila envelopes.
- Routing inter-office mail in reusable envelopes.
- Reusing gaylords, pallets and assorted equipment disposed of by local industries for paper collection and storage.
- Reusing pallets for moving and storing recyclable materials.
- Welding, painting and building lids for old dumpsters to use for cardboard recycling.
- Using office equipment and furniture discarded by other government agencies.
- Buying used equipment from the state surplus program.
- Buying used lighting fixtures for the recycling warehouse.
- Giving used tires to retreader.

The Authority is also part of a "brainstorming" code enforcement group. Twice a month, representatives from offices of law enforcement, fire department, social services, county and town manager, building inspector, and solid waste management meet to discuss issues such as illegal dumping, junk car removal, environmental health, and litter abatement.

Resources:

Used

This program has a budget of more than \$30,000 including the salary of a recycling/waste reduction coordinator and one other part time employee. The North Carolina DPPEA has provided grant support for demonstration projects. Funding for the Authority comes from tipping fees paid by private customers and by member counties Dare, Hyde, Tyrrell, Perquimans, Chowan, Gates and Currituck, and their municipalities. North Carolina Cooperative Extension Service agents work closely with the Authority by educating the public about source reduction and developing and implementing programs.

Available

The Authority has available samples of successful grant proposals, reports on their award-winning regionalization program, program outlines, and brochures used for public education. The Authority also sends source reduction tips to local newsletters and newspapers.

Outcomes:

Evaluation

The Authority uses participation in the programs as a measure of the success of their efforts. Any reduction of waste is considered a success.

Barriers Encountered

No significant barriers to carrying out source reduction programs were encountered.

Program Strengths

Historically, there has been a high degree of cooperation in the Albemarle region of North Carolina. Everything from health care systems to water systems have been developed on a regional basis. When the area's counties and municipalities needed to address Subtitle D landfill regulations, the natural move was to carve out a cooperative agreement. In its 20 year

regional contract with a private landfill, the Authority only pays for the tonnage of waste that is landfilled, thus providing an incentive to implement source reduction programs.

The Authority, though originally formed to provide affordable solid waste disposal services, soon accepted a cooperative agreement with a local non-profit environmental group to work with this group's waste reduction coordinator. Begun as a one-year pilot program, the coordinator position has been assumed by the Authority, and has allowed it to provide education and continue to develop waste reduction programs which are shared by all member counties.

Lessons Learned

Working regionally, one can develop programs not affordable to individual counties. Be persistent with slow starting programs.

Dunn County, Wisconsin

Population: 35,909

Type: Rural. Located in west central Wisconsin.

Contact: Solid Waste Office, 800 Wilson Avenue, Menomonie, WI 54751, (p) 715/232-4017; (f) 715/232-6770.

Goal/Impetus:

The goal of the program is to reduce the quantity of recyclable and non-recyclable waste generated by government offices and other operations by 15% by weight over a one year period and to conduct a six month education campaign to reduce the county-wide waste generation rate by 5% by weight. The target audience includes all county operated facilities. A state grant provided an incentive to initiate the program.

Strategy:

The Dunn County Waste Reduction Demonstration Program elevated the general awareness of solid waste source reduction among residential and nonresidential waste generators in the county, and motivated changes in behavior to reduce waste generation rates. This was accomplished by conducting a thorough in-house

source reduction pilot project for county offices and operations, and a similar pilot project in three volunteer households. The pilot projects quantified the amount of waste reduced and kept track of the changes made to reduce waste in the facilities and households. The county projects will be followed by an extensive public education campaign to communicate the benefits of source reduction, including quantified local results, to the rest of the county's waste generators.

The Health Department tracked and documented that 23% of their copies were made double-sided. If all of Dunn County followed their lead, the county could save a stack of paper 128 feet tall. The Dunn County Court House achieved a 14% reduction in the amount of waste it generated and a 65% recycling rate.

The Dunn County Health Care Center made simple changes that have saved them significant resources, including:

- Switching to reusable steel food tray covers for a savings of \$3,000 per year on aluminum foil and plastic film wrap.
- Reducing waste by 1.5 tons per year by switching to a juice machine instead of disposable containers.
- Eliminating more than 5,460 milk containers by using returnable containers.

case study 2

in-house source reduction programs

▼
 Implementing a program is only half of the challenge. In order to achieve success, you need to continue to motivate people and develop new ideas.

Dunn County, Wisconsin, continued

The Health Care Center achieved an 18% reduction in the amount of waste generated and is recycling 14% of their waste.

The Dunn County Highway Shop also has realized savings from reducing waste at the source through:

- Eliminating 288 disposable aerosol cans per year by using refillable air-charged dispensers, saving \$240 per year.
- Reusing floor-drying cleaner and saving an estimated 480 pounds of waste and \$190 per year.
- Eliminating disposable towels.
- Using a wipe-off reusable sheet for shop orders, reducing paper use at the facility.

The Highway Department achieved a 32% overall reduction of waste and a 12% recycling rate (not including scrap metal recycling efforts).

Resources:

Used

The State of Wisconsin funded the program through a Waste Reduction and Recycling Demonstration Grant. The total project cost was \$55,434, paying for one quarter time employee of the Dunn County Solid Waste Department, one full time consultant for 8 months and one full time intern for half a year from the Dunn County offices. The Solid Waste Fiscal Clerk assisted with secretarial work and the University of Wisconsin provided additional resources.

Available

A final report documenting the program's success is available. Also available is the *Dunn County Green Pages*, which present an analysis of the county's municipal solid waste stream and other useful information.

Outcomes:

Evaluation

The county targeted and tracked specific items in the wastestream such as paper used, copies made, lunch-room waste and filing procedures. They also measured quantities of total MSW and recyclables generated to identify reductions in these quantities. The Department met all of its program goals.

Barriers Encountered

State funded demonstration grants often produce little more than a final report. Programs need to be geared for the long-term and require continued support and efforts in order to make an impact. Many within the county's offices felt the program would be a burden, which resulted in insufficient staff assigned to the project. The program also demonstrated that an in-house employee may be more productive than a consultant because they may be more in tune with the program.

Program Strengths

There was great enthusiasm for the program at the grassroots level. The most successful part of the program was its ability to educate individuals about source reduction. The press gave the effort a lot of positive attention which helped educate a broader audience, leading other communities around the state to establish similar programs. Also, the program established general operating procedures to reduce waste in county facilities, an important tool that will promote source reduction efforts in the future.

Lessons Learned

Implementing a program is only half of the challenge. In order to achieve success, you need to continue to motivate people and develop new ideas. Repetition makes for a successful program.

Kalamazoo County, Michigan

Population: 225,000

Type: Suburban.

Contact: Mary Powers, 201 W. Kalamazoo Ave., Kalamazoo, MI 49007, (p) 616/384-8111; (f) 616/383-8862.

Goal/Impetus:

To help reduce the burden of waste disposal in the state of Michigan, Kalamazoo County has established a formal "Waste Reduction Policy" to minimize waste at county facilities, support markets for recycled content products and responsibly manage the disposal of non-recyclable materials. All county employees are targeted for the program. As a government organization, the county of Kalamazoo is inspired to demonstrate the feasibility of waste reduction to other public and private sector organizations.

Strategy:

A ten member Internal Waste Reduction Committee representing all county departments manages the program. The Waste Reduction Policy publicly outlines the committee's directives and legitimizes the committee's activities for County Commissioners and department heads. An employee newsletter and an active volunteer network encourage communication about program implementation, feedback and new ideas.

The program was initiated for the 20th anniversary of Earth Day in 1990. It began with a policy for using double sided copies and has evolved into training programs, and awards that promote waste reduction. Also, a quarterly report of all purchases made by each department documents and compares recycled content and virgin material content purchases, and indicates those items that could have been purchased with recycled content. This approach uses peer pressure as the motivating force to encourage departments to change their buying practices. A yearly report also is produced for the county commissioners which describes the program's accomplishments and includes suggestions for the next year.

A recycling coordinator gives training to each department on recycling and source reduction. The

coordinator also works with the private sector and demonstrates how the county program benefits a working force of 700 and could also benefit industry.

Resources:

Used

Personnel costs are approximately \$35,000, which includes a full time recycling coordinator and approximately 20% of the committee chair's time. The ten committee members spend less than 10% of their time on the project. There is no formal budget for the program.

Available

Copies of the reporting forms used by the government departments are available.

Outcomes:

Evaluation

Evaluation criteria include the volume of material landfilled and recycled, the amount of recycled content supplies and papers purchased by the department and the frequency of requests for double-sided copying. For most evaluation criteria, the goals were met. However, the committee continues to find room for improvement.

Barriers Encountered

Some department personnel will not participate if it is not something they personally believe in, requiring the need for increased educational efforts.

Program Strengths

Inter-departmental cooperation encourages employee participation. The quarterly report has proven to be a great motivational tool. It is a way for the different departments to compare their purchases and measure their progress against one another.

Lessons Learned

Many in the county have been overwhelmed by what can be accomplished by empowering employees and working together to achieve a common goal. The program has helped build relationships that may benefit and lead to increased coordination among departments.

case study 3
.....
*in-house source
reduction programs*

▼
*Many in the
county
have been
overwhelmed by
what can be
accomplished by
empowering
employees and
working
together to
achieve a
common goal.*

section II

policy options and incentive programs overview

Local officials can take a variety of approaches to reduce waste in the community – from adopting ordinances and directives to influencing the marketplace through economic incentive programs. To date, few local governments have passed policies to ban or regulate the purchase or use of materials. However, an increasing number are beginning to adopt economic incentives that encourage residents and businesses to reduce waste. Also, states can play an active role in giving communities incentives to encourage waste reduction. In some cases, a regional approach may be the most effective mechanism for passing source reduction policies.

Program Types:**Policy/Regulatory:**

- **Waste reduction goals**, established at the state level, that give credit for source reduction, providing communities with an incentive to incorporate source reduction into municipal solid waste planning.
- **Material bans** that limit the collection, use or sale of some items and prohibit others from being land-filled, thereby encouraging source reduction, reuse and recycling. For example, at least 20 states have banned yard trimmings from entering the landfill to encourage backyard composting and grasscycling, greatly reducing the burden of disposing these items.
- **Procurement policies** that encourage or require government offices to purchase environmentally preferable supplies or services, and implement strategies to reduce procurement through buying in bulk, purchasing durable, reusable, refillable or rechargeable products.

Economic Incentives:

- **Unit-based pricing** or “pay-as-you-throw” programs where customers are charged for waste collection and disposal services based on the amount of trash they generate. When combined with recycling, these programs have produced impressive results.
- **Award or recognition programs** sponsored by local governments that publicize the source reduction achievements of residents and businesses based on criteria such as waste

reduced, innovation, and cost savings.

- **Rebate programs** to consumers and manufacturers of products that promote source reduction, such as mulching lawnmowers or reusable, repairable, and more durable products.

Lessons Learned:

- Educate the public about the benefits of the policy or incentive program to promote awareness and gain support.
- Involve the public in the process from the beginning to ensure that there are no surprises along the way.
- Gain support from the community to pass source reduction initiatives. It also is critical that elected officials understand the role of source reduction in managing the community’s waste, and how the initiative fits into the “big picture” of conserving resources in the community.
- Be prepared to make changes and program improvements. Remain flexible and open to modifying the initiative as the program develops and matures. Make sure solid waste staff is well prepared for the initiative.
- Don’t expect success overnight. Source reduction is an emerging approach to managing solid waste and will take time to gain acceptance and take effect.

Program Examples:**Waste Reduction Goals:**

- In the state of **Minnesota**, counties can receive a 3% credit toward their recycling goal for implementing specified source reduction activities.

Material Bans:

- After the state of **Michigan** instituted a yard trimmings ban, the **City of Midland** noticed a source reduction benefit based on its program to divert yard trimmings from its landfill. Midland established a fee-based yard trimmings collection program which resulted in a 14% reduction in yard trimmings generated by city residents. The success was credited to increased mulching of grass clippings and, to a lesser extent, increased backyard composting.

policy options and incentive programs overview, continued

- **Dane County, Wisconsin** bans a number of materials from its disposal facilities, including newspapers, corrugated cardboard, glass bottles, cans, and HDPE and PET plastic bottles to encourage source reduction and recycling.

Procurement/Waste Reduction Policies:

- **Cincinnati, Ohio** has an Environmentally Preferable Procurement ordinance that requires that all city departments, boards and commissions specify preference, where appropriate, for environmentally preferable supplies, services or construction materials that have a reduced impact on human health and the environment. This allows a 3% preference to bidders offering an environmentally preferred product or service.
- **Berkeley, California** has a policy that all proposals and reports submitted by outside contractors must be double-sided and on recycled-content paper.

Economic Incentives:

- **Worcester, Massachusetts** implemented a volume-based disposal fee program in 1993. This city of 170,000 is the second largest city in New England. Coupled with its curbside recycling program, the volume-based program has succeeded in reducing solid waste disposed of by the city by almost 45%.
- During the first year of its volume-based program, the city of **Gainesville, Florida** and the surrounding county of Alachua has seen a 35% increase in the collection of recyclables and a 20% reduction in its solid waste stream.
- **Arlington County, Virginia** has offered its residents a total of \$10,000 in rebates for low-emission mulching lawnmowers to reduce yard trimmings

entering the solid waste stream. The county worked with area businesses to put the program in place. With a total of 159 participants, the county sold out of its rebates in only 25 days.

Award/Recognition Programs:

- **King County, Washington** has a "Dollars for Data" program that provides financial assistance to businesses and institutions to test waste reduction strategies. Programs funded to date include a wine bottle collection and reuse project; use of reusable plastic containers for seafood delivery; use of durable, reusable dishes for take-out food from a full-service restaurant; returnable dry cleaner bag program; worm composting at a local food bank; and replacement of disposable plastic garment bags with durable nylon bags at Nordstrom Distribution Center. Data regarding costs, staffing, and other issues are tracked to determine the effectiveness of these projects.
- **King County, Washington** also has established "Waste Free Fridays," where the city spotlights specific waste reduction behaviors and works with selected business partners to reward individuals who practice source reduction. The city establishes a different "Waste Free Friday" activity each quarter of the year. The effort and the business co-sponsors are promoted through advertising and public service announcements, as well as signs in participating stores, buttons, T-shirts for store clerks and inclusion in the business partners' advertising. Some past events include: free coffee to customers who brought a durable mug on Friday to Bruegger's Bagel Bakeries; discounts on mulching mowers on Friday from Toro; and discounts on two-sided copying from Kinko's on Fridays.

Tompkins County, New York

Population: 94,000

Type: Mixed urban, rural, and suburban, with a significant portion of waste generated by public institutions (college and universities).

Contact: Tompkins County Solid Waste Management Division, 122 Commercial Ave., Ithaca, New York 14850; (p) 607/273-6632; (t) 607/275-0000.

Goal/Impetus:

In 1990, Tompkins County faced spending many millions of dollars on planning and siting a new landfill and recycling and solid waste facility, and closing and maintaining its old landfills. To prolong the life of the existing landfill and cover these costs, the county instituted a disposal fee for garbage, bulky wastes and construction and demolition debris. The county implemented a "trashtag" system to meet two goals: 1) an economic goal of shifting the funding for solid waste costs away from the taxpayer base, and 2) a social goal for the county by reminding all Tompkins County residents of their personal responsibility for the amount of garbage they generate. Additionally, through the implementation of an annual solid waste fee, the county required exempt properties — which at the time comprised 30% of the county — to pay a more equitable share of waste disposal and diversion costs.

Strategy:

The Tompkins County Division of Solid Waste Management initiated the trashtag program with approval from County Board of Representatives. The trashtag program is a user-fee program that requires residents to purchase a tag for each container of garbage they put out for pick-up. Haulers make the tags available to residents. Residents pay an established price for each tag which allows them to set out a specified amount of waste (between 15 and 35 pounds, depending on the tag used). A collection fee may be billed on top of the tag, or included in the price of the tag, depending on the hauler. A subsidy for the trashtag program is available for low income households.

The trashtag program is one part of an overall waste reduction program that the county has implemented.

Other activities of the Solid Waste Division include county-wide curbside collection of recyclables, and a central processing facility for waste and recyclables. The county started a curbside collection program serving more than 31,000 residences in August 1991. The county designed the trashtag and curbside recycling programs to work together. The trashtag program creates an economic incentive for people to reduce their household waste while the recycling program provides a convenient method for residents to recycle. The cost of recycling is included in the annual solid waste fee.

Resources:

Used

Since 1991, the entire solid waste budget, including recycling, has been paid through the trashtags and the annual solid waste fee. Each hauler is responsible for passing collection and disposal charges directly to residents through the tag system (some haulers bill collection separately and use the tag to reflect only the landfill disposal charges).

Available

Various brochures, newsletters, and a report on the Tompkins County Trashtag and Recycling Study.

Outcomes:

Evaluation

Compliance with the trashtag program was better than expected. Soon after implementation, more than 95% of the residents were participating. Residential recycling rose substantially in the pilot project area (almost doubling for some commodities) and the amount of garbage placed at the curb was noticeably reduced. An added benefit was that the garbage set at the curb was more neatly placed. Since implementation of the trashtag program, some Tompkins County municipalities have reported up to 50% less trash being generated by their residents.

The county mailed a survey to 3,034 residents in September of 1990; 1,422 responses were received. According to the responses, 47% of the respondents put out less garbage since the trashtag program began. Nearly 51% of the respondents reported they recycle more since the trashtag program began, while nearly

case study 1
.....
*policy options and
incentive programs*

▼
The trashtag program creates an economic incentive for people to reduce their household waste while the recycling program provides a convenient method for residents to recycle.

chapter iii/case studies

Tompkins County, New York, continued

40% recycled the same amount. Nearly 16% of the sample reported composting more, and 39% stated that they pay more attention to product packaging when they shop. The majority of the respondents (63%) said they favor or somewhat favor the trashtag program, while 26% oppose or somewhat oppose the program.

Barriers Encountered

As a result of the increased disposal fees, there may have been an increase in illegal dumping in the county. This problem was solved by designating an illegal dumping enforcement officer to monitor and enforce disposal throughout the county. County officials also recognized the equity issues involved in implementing a trashtag program. The county created a low income subsidy for county residents on public assistance.

Program Strengths

Disposal fees at the landfill and tags at the curb constitute a "pay-as-you-throw" system, thus those residents, businesses and institutions that generate the least trash pay less money.

Lessons Learned

Promote the benefits of the program to your residents. Also, maintain an open dialogue with the haulers. The county worked with the haulers from the trashtag program's beginning, keeping them involved in the process and ensuring that there were no surprises. The county has continued to hold monthly meetings between solid waste staff and the haulers to improve communications and to discuss anticipated program changes.

case study 2

.....
policy options and
incentive programs

▼
Education is
the key.
Convey to
residents the
objectives
behind initiating
the volume-
based rates
program
including
cost savings
and waste
reduction.

City of San Jose, California

Population: 845,000

Type: Urban; solid waste stream is approximately 65% commercial/industrial, 35% residential.

Contact: Ellen Ryan, City of San Jose, Environmental Services Department, 777 North First Street, Suite 450, San Jose, California, 95112-6311, (p) 408/277-5533; (f) 408/277-3606; E-mail: ryane@ci.sj.ca.us.

Goal/Impetus:

San Jose initiated a volume-based rate program as an incentive to increase residential recycling and source reduction. Their goal was to achieve a 50% diversion of the residential waste stream by 2000 in accordance with both a City of San Jose goal and California AB 939 diversion requirements. Additionally, the city wanted to promote voluntary diversion instead of mandating recycling. The city also strives to offer high quality service at a competitive price.

Strategy:

The City of San Jose Environmental Services Department initiated its volume-based rate program in 1993. The city provides solid waste recycling and yard trimmings collection services to all residents through contracted services. The city contracts for disposal of residential waste with a local landfill.

Prior to implementing the volume-based rates, all billing was conducted through the hauler. Haulers charged residents a flat rate with unlimited garbage service. Haulers also provided residents with limited recycling services. Billing is now conducted by the city. Residents are charged on the basis of cart size (32, 64 and 96 gallon). Low income rate assistance is offered.

The city began a process about 14 years ago to increase service provider competition. At that time only one company provided solid waste services. Through a series of competitive bid processes and contract arrangements, there are now four residential haulers; two haulers provide yard trimmings collection services and two other haulers collect solid waste and recyclables (and process collected materials). In addition, the city has contracts with three yard trimmings processing facilities.

Resources:

Used

Initially, the city's solid waste staff proposed to the City Council that the volume-based rates program be funded in full through the fee charged to residents. However, the City Council decided to subsidize residential collection through the commercial sector. The program is now at an 87% cost recovery, with the remainder subsidized by businesses. There is a five year plan for the program to achieve full cost recovery. The city also established an enterprise fund for all expenses and revenues related to solid waste, recycling and yard trimmings diversion, with the exclusion of a franchise fee on commercial solid waste collection and a disposal facility tax which goes to the general fund. The city has 20 full-time staff working on all aspects of the city's integrated solid waste management program. The annual budget is \$59 million.

Available

Program handouts and reports are available.

Outcomes:

The city has increased its diversion rate from 28% in 1993 to 48% in 1995. The city offers the most comprehensive services in Santa Clara County at a competitive cost to residents. A number of resident surveys have been conducted. Overall, the response has been very positive in favor of the volume-based rate program.

Barriers Encountered

Elected officials had some apprehension about implementing the program. Their concerns were related to

the risk of resident dissatisfaction. The program start-up had a few initial problems, primarily because the city concurrently implemented an automated cart collection program. Also, there was a slight increase in illegal dumping after the program was implemented. However, since most of the illegally disposed waste is commercial, this increase may be related to increases in the city's disposal facility tax and commercial hauler fees.

Program Strengths

As with other successful volume-based rates programs, San Jose embarked on a yard trimmings diversion program prior to implementing volume-based rates. Additionally, the city substantially expanded its recycling program ("Recycle Plus!") to include mixed paper, polystyrene, milk and juice cartons, plastic bags, scrap metals, textiles, corrugated cardboard and plastic bottles at the same time they implemented the volume-based rates program. Residents pay one monthly fee based upon cart size, with no additional charge for collection of yard trimmings or recyclable materials.

Lessons Learned

Education is the key. Convey to residents the objective behind initiating the volume-based rates program including cost savings, waste reduction and other benefits of the program. Education on recycling, yard trimmings diversion and waste prevention also are important. Solid waste staff also must have a concrete policy formulated prior to developing a volume-based rates program. Conduct research in advance to design a program that will best meet the needs of the community. Support from elected officials also is important. Be prepared to make ongoing program adjustments and improvements.

case study 3

.....
policy options and
incentive programs

▼
The success of
this type of
program
depends on
detailed
knowledge of
the equipment
available in the
local market-
place and
consumers'
buying habits.

26

Arlington County, Virginia**Population:** 185,000**Type:** Urban.**Contact:** Preston Read, Recycling Program
Manager, Solid Waste Division, 4300 South
29th St., Arlington, VA 22206,
(p) 703/358-6486; (f) 703/358-6493.**Goal/Impetus:**

After establishing a successful program to handle the county's recyclables, Arlington County turned its attention to the community's yard trimmings in 1996. Refuse collected from Arlington's 31,000 single family homes increases almost 20% during the growing season, and staff estimates the county spends between \$70,000 and \$110,000 per year in disposal fees alone for grass clippings.

Composting grass clippings at the county's mulching facility was not possible because of space constraints and potential odor problems. Collecting grass separately and hauling it out of the county (the nearest facility is a three-hour round trip) was prohibitively expensive. As an alternative, the county decided to conduct a pilot program to give residents an incentive, in the form of rebates, to encourage the use of low emission mulching lawnmowers. Mulching lawnmowers are designed to cut grass clippings into many fine particles, acting as a fertilizer for the lawn and eliminating the need for bagging yard trimmings. Limiting the rebates to low emission mulching lawnmowers helped improve air quality in the community.

Strategy:

The County Board approved funding for the pilot program in late April, 1996 just as the mowing season began. The county set rebates at different levels: \$75 for electric powered mulching mowers, \$50 for gasoline mulchers which meet California's stringent emissions standards, and \$25 for manual reel mowers.

The county used two main strategies to market the program. Staff designed a brochure that was hung on residents' trash cans. This was highly effective, as residents, not accustomed to receiving a brochure on their trash can, took the time to read the information. Staff also distributed the brochures to area

retailers, who were generally enthusiastic about the program. Because the large retailers are extremely busy in the spring, staff had to make several visits in order to ensure that all of the sales staff were aware of the program.

Resources:**Used**

The county appropriated \$10,000 in funding for the rebates, spent an estimated \$2,800 developing the brochure, and dedicated .2 FTE staff equivalent to the project.

Available

Program brochure.

Outcomes:

Residents exhausted the \$10,000 in less than one month. The county issued a total of 159 rebates to residents. Electric mowers were by far the most popular (74%), followed by reel (22%) and low emission gas (4%). Electric mowers, whether rechargeable or with cords, are best suited for smaller lawns. This helps explain their popularity since the average lawn in Arlington is 1/12 acre or 3600 square feet. More than 85% of the program participants returned the follow-up survey, and the results were encouraging. Seventy-nine percent (79%) of those surveyed had previously owned non-mulching mowers, and 58% had previously owned high emission mowers. Forty-six percent (46%) retired their old mowers early because of the rebate and more than half had previously bagged their clippings for all of part of the mowing season.

In October, 1996, the County Board approved an additional \$25,000 for a rebate program in 1997. The only difference in the 1997 program is that the rebate amount for electric mulching mowers will be \$50. This will allow more residents to take advantage of the program, while still providing a powerful enough incentive to participants.

Barriers Encountered

The County Board did not want to give rebates for equipment that residents would be buying anyway. Solid Waste Division staff addressed this concern by contacting both large and small retailers in the region

and found that while sales of mulching lawnmowers has increased, gasoline powered models continue to dominate the market.

Program Strengths

The program included an effective education and communications strategy to inform residents how the program works and the benefits of the program. This helped increase public awareness of source reduction and the role that the homeowner plays in environmental protection. The program presents a cost-effective approach to reducing the disposal of

grass clippings and provides other environmental benefits, such as lower air emissions.

Lessons Learned

Source reduction options can be more cost-effective than separate collection and disposal and can be implemented in a creative way to maximize participation and improve awareness of resource conservation. The success of this type of program depends on detailed knowledge of the equipment available in the local marketplace and consumers' buying habits. Retailers can be extremely helpful in promoting this type of program.



section III

education programs for residents *overview*

Public education is a critical part of source reduction programs as residents and businesses are often unaware of source reduction opportunities. Communities use a variety of ways to inform residents about source reduction and encourage participation in their programs. These include:

Program Types:

- **Source reduction public education campaigns** using print, radio, and television media, transit advertisements, direct mail, flyers inserted into recycling bins, presentations at schools, and other sources to reach as broad an audience as possible;
- **Targeted informational campaigns**, such as “smart shopping” programs that inform residents about specific behavioral changes. These programs can include in-store education, shelf-labeling, and direct mail;
- **Clearinghouses, hotlines, and on-line services** that provide specific source reduction information to residents and/or businesses such as where they can take goods for repair and reuse;
- **Source reduction and reuse training** that includes workshops, in-person presentations, smart shopping grocery tours, and on-site demonstrations.

Lessons Learned:

- **Get the word out.** Targeted and comprehensive communication is an essential component of education programs. This can be a particular challenge in sparsely populated communities. Communities with successful education programs utilize a broad range of outreach tools to communicate to residents, including radio and television media, direct mail, newspaper advertisements, billboards, and the school system.
- **Measure the success and impact of the education program** by conducting before and after telephone surveys, store exit polls, or measuring product sales to assess changes in attitude and behavior.
- **Don't be afraid to take your message to the residents.** Residents are busy and may not have the time or inclination to attend in-person workshops.

- **Reach out to residents through already existing networks, recycling programs and meetings, and working with community groups like the League of Women Voters.**

Program Examples:

Public Education Campaigns:

- **Tompkins County, New York** sponsored a “Get the Goods not the Garbage” campaign that used newspaper and media releases, employee memos, newsletter inserts, newspaper paid ads, and posters at small community centers.
- **Hillsborough County, Florida** runs a show on Government Access Television about waste reduction and “Enviroshopping” principles. Tapes of the show also are available at most video rental stores and libraries for free rental.
- **Albemarle Regional Solid Waste Management Authority, North Carolina** sends source reduction tips to local newspapers, business organizations, schools and all members of the office paper recycling programs.
- **New York City, New York's** unwanted direct mail reduction campaign is achieving an estimated 1,000 ton reduction in unwanted direct mail.
- **The City of Milwaukee, Wisconsin** has designated 10 public schools as a “pollution free zone,” where students survey their school's practices and propose source reduction strategies. Students document what changes have occurred in their schools through the program and make formal presentations to the City Council, the School District Board of Directors and other groups.

Smart Shopping Campaigns:

- **Tompkins County, New York's** waste prevention campaign includes point of purchase educational outreach, and works with a cooperative extension service to train volunteers to give source reduction presentations.
- **Sarasota County, Florida's** source reduction campaign includes hands-on grocery store tours for “Smart Shopping” which is popular with its residents.

education programs for residents overview, continued

- **Albemarle Regional Solid Waste Management Authority, North Carolina** trains school children and civic groups in smart shopping techniques.

Hotlines and On-Line Services:

- **The City of New York** will launch its Reuse Hotline in 1996, to allow city residents to call into an automated telephone system to obtain information about businesses and nonprofit organizations where they can sell, donate, or obtain second-hand goods. The primary objective is to reduce the amount of second-hand goods entering the city's solid waste management system, as well as to benefit the local economy by expanding supplies and markets for second hand materials for the advantage of small businesses, charitable organizations, consumers and others. The Department of

Sanitation recruited the involvement of NYNEX in development of the Reuse Hotline.

Source Reduction/Reuse Training Workshops:

- Starting in June, 1995 **King County, Washington** mailed a Home Resources Kit to all new homeowners. The kit includes information on waste prevention techniques for the home, and contains four pre-addressed postcards that residents can send to be removed from junkmail lists. A survey of kit recipients showed that 40% of the respondents had taken some action based on the information received in the kit.
- **Hillsborough County, Florida** trains volunteers who give presentations on waste reduction and "enviroshopping" for organized groups. These volunteers also staff exhibits.

case study 1

education programs
for residents

▼
With a little imagination, any community can start some type of source reduction program. Even the smallest program plays an important role in reducing waste.

Trinity County, California

Population: 14,500

Type: Rural, with a population including cattle ranchers, tourists, timber workers, commuters and a high unemployment rate.

Contact: Steve Mackay, P.O. Box 2700, Weaverville, CA 96093, (p) 916/623-1326; (f) 916/623-5015

Goal/Impetus:

Trinity County started its reuse program to meet the state of California's waste reduction mandate of 50% diversion of the total wastestream by 2000, and to assist its residents in finding used products. The goal of the county's program is to increase awareness about waste issues, develop alternative options to disposal and promote reuse. The county residents suffer from

low paying or seasonal jobs and a 20% unemployment rate. Many residents cannot afford to buy new items.

Strategy:

Trinity County has two reuse projects. The first is a resource exchange started several years ago. The county set up trade bulletin boards at the landfill and eight transfer stations. Residents and businesses leave information about used materials offered or materials needed. Also, the local transfer site operators are given salvage rights to supplement their wages. The operators extract reusable items from the wastestream which they sell at the sites. The salvage program takes approximately 45 cubic yards out of the wastestream a month, which is between 1-1.5% of the wastestream. In addition to the reuse activities at the waste sites, a local solid waste task force provides community waste reduction programs. Also, *The Trademark*, a weekly advertising circular runs ads at little or no cost for reusable materials

offered or wanted.

The grocery bag reuse program is Trinity County's newest source reduction program. The county designed a metal rack for used paper grocery sacks located at grocery store entryways. Shoppers can take a bag if they forget to bring their own, and drop off bags for others to use. Three markets in Trinity County have signed up to participate in the program. Other communities may want to check state or local public health regulations before adopting a similar initiative. In addition, the county has arranged with AmeriCorps* VISTA volunteers to provide waste reduction audits for local businesses.

In the future, the county would like to open a reusable goods warehouse at their landfill. The warehouse would be operated by the county and offer residents a place to drop off and purchase reusable goods.

Resources:

Used

Trinity County Solid Waste Department has three full time employees and few resources to apply to a source reduction program. However, with lots of imagination and a little staff time, the department established the resource exchange program. For the bag rack program the county received a \$5,000 state grant. The county relies heavily on its local waste reduction task force to help implement the reuse programs. To educate the community about reuse, the county issues a public service announcement through the local newspaper once every quarter.

Available

No written material is available, but staff welcomes any questions about the program.

Outcomes:

Evaluation

Because the county only recently began gathering data on waste reduction it is unable to measure the results of the program. Continued participation in the resource exchange program is the county's best indication that the program is successful.

Barriers Encountered

The greatest barrier to implementing the reuse program is the lack of effective communication between the county and its residents. The county has only one local weekly newspaper and no local television or radio stations; thus it is difficult to educate residents about the program. This remains a problem, but having a presence at all the transfer stations and grocery stores helps. In addition, children learn about environmental issues in school and educate their parents. Another barrier is the sheer vastness of the county. The distance and rough terrain make it difficult for staff to exchange materials and information. To overcome this barrier, the county designed the exchange program to be locally run; the salvage operators run the yard sale at the transfer sites and maintain the resource exchange bulletin boards.

Program Strengths

The program takes few resources to implement, is self-sufficient and popular among the residents.

Lessons Learned

Do not let the lack of financial resources or staff prohibit waste reduction efforts. With a little imagination, any community can start some type of source reduction program. Even the smallest program plays an important role in reducing waste.

case study 2

education programs
for residents

▼
If getting
people to your
workshops is a
problem, figure
out a way to
take the pro-
gram to them.

32

Pinellas County, Florida

Population: 900,000

Type: Primarily urban/suburban, with some rural areas. Largest cities: St. Petersburg and Clearwater.

Contact: Rebecca Stone, Recycling Coordinator, Pinellas County Solid Waste Operations, 3095 114th Ave. North, St. Petersburg, Florida 33716, (p) 813/464-7565; (f) 813/464-7712.

Goal/Impetus:

Adopted in 1990, Pinellas County's waste management plan establishes waste prevention and recycling goals for the county. The county began its educational program targeted at residents to address the goals outlined in its management plan.

Strategy:

Pinellas County has focused a portion of its residential education on reducing waste at the grocery store. The county started its campaign with a general waste prevention brochure on "Ecoshopping" ("eco"= economical and ecological) that it distributed to residents. However, the annual phone survey of more than 500 residents revealed that the "Reduce Though Economics" theme was not getting through to the residents.

The staff then redesigned the brochure and offered store tours to groups of shoppers to give more hands-on guidance. The county advertised their workshops in the newspaper, but had only a few participants.

Not to be discouraged, staff "took the show on the road." Their traveling tour uses a display and slides and product samples to educate the audience. Once a year, the county mails information about the free slide show to all teachers and clubs registered in Pinellas County. This method has proven successful. The county has shown the program to more than 300 groups in just two years, such as the girl/boy scouts, League of Women Voters, Kiwanis and home economics classes.

The county conducted its next source reduction program on a regional basis in conjunction with two other counties and the City of St. Petersburg. These agencies committed \$47,000 for a 3-month waste prevention advertising campaign in the fall of 1996.

Resources:**Used**

Pinellas County Solid Waste Operations has three staff members who each spend approximately 15% of their time on the "Ecoshopping" campaign. The county has spent about \$25,000 on brochures, distributions, mailings, etc. The annual phone survey of 500 residents costs \$6,000.

Available

"Ecoshopping" slide show script, slides and brochure, and 60, 30 and 15 second waste reduction TV ads.

Outcomes:**Evaluation**

Solid Waste staff has conducted a random phone survey of 500 residents for the past eight years and is using the results from this survey to measure the program's success. Survey results indicate a growing preference for environmentally friendly products and packaging. The stores which participated in the original store tours have offered new, more environmentally preferable items and limited overpackaged items.

Barriers Encountered

Staff found it difficult to work with the grocery stores. The stores were afraid of negative publicity by the county for not offering enough source reduced options for consumers. The county overcame this barrier by explaining to store managers that the program did not tell people to avoid certain stores, just items. The county found it easier to work with larger chains than smaller stores which harbored suspicions about the program.

Program Strengths

The county has a recycling committee comprised of all the cities in the county and industry representatives. The committee works together to discuss current programs and plan new ones. The "Ecoshopping" program got early approval from this committee which helps the county "sell" the program.

Lessons Learned

If getting people to your workshops is a problem, figure out a way to take the program to them.

San Francisco Bay Area, California

Population: 6.5 million

Type: Urban/suburban.

Contact: David Assmann, City of San Francisco Recycling Program, 1145 Market St., #401, San Francisco, CA 94103, (p) 415/554-3400; (f) 415/554-3434.

Goal/Impetus:

The *Shop Smart: Save Resources and Prevent Waste* campaign is a unique public-private partnership with 103 cities and counties in the Bay Area working with 225 supermarkets to bring shoppers messages about the importance of source reduction and buying products made with recycled content. The campaign lasted three and a half weeks, from January 7 through January 31, 1996.

Strategy:

The campaign combined in-store materials with a major media campaign to promote source reduction and buying products made from recycled materials. In particular, the campaign focused on seven waste prevention and buy recycled messages:

- *Close the Recycling Loop:* Choose recycled packaging — glass, aluminum, steel;
- *Close the Recycling Loop:* Look for “Made with Recycled Content” on products and packaging;
- *Reduce Waste:* Bring your own reusable bag;
- *Reduce Waste:* Concentrates and economy sizes use less packaging;
- *Reduce Waste:* Reusable products save resources;
- *Reduce Waste:* Items with less packaging save resources;
- *Reduce Waste:* Compost your fruit, vegetable and plant trimmings.

Resources:

Used

Major support for the campaign came from numerous government agencies and private companies, including the California Integrated Waste Management Board, California State Association of Counties, Local Government Commission, League of California Cities, California Department of Conservation, Steel

Recycling Institute, Safeway, Inc. and Pacific Bell Directory, as well as from cities and counties in the Bay Area.

Available

Displays, shelf tags, brochures.

Outcomes:

Evaluation

To evaluate the campaign, the city hired a research firm to conduct exit polls and measure product sales. The firm interviewed shoppers at stores in each of the nine counties and used sales data from Safeway to measure product sales.

Analysis of product sales at Safeway Stores showed sales of products with minimal packaging and recycled content increased by 19.4% during the campaign, while sales of overpackaged products declined by 36%. Exit polls (conducted both during and after the campaign) showed that 43% of the shoppers remembered one or more elements from the campaign, thereby reaching one million shoppers. The media campaign was remembered by more than 1.5 million people. On average, each Bay Area resident heard 6 radio spots and saw 3 television ads. Twenty-nine percent (29%) of the consumers who noticed the campaign bought in bulk, 20% bought reusable products, 18% bought items with minimal packaging, 18% bought items with recycled packaging, and 10% brought their own bags to the checkout counter.

The main messages shoppers took from the campaign were: support recycling (37%), reduce waste (34%), buy recyclable packaging (30%), buy less packaging (20%), buy in bulk (17%), bring your own bags (15%), avoid disposable products (13%), and avoid single serve sizes (12%).

Barriers Encountered

At first, the program had a number of obstacles to overcome. Cities and counties had never worked together on this type of project before, and many were initially skeptical about the potential effectiveness of this effort. Also, while supermarkets had worked with individual cities before, a campaign of this nature had never been attempted on a large scale. Because the Bay Area is a very diverse area, the partnership also needed to present their promotional materials in multilingual formats. As a result,

case study 3

.....
education programs
for residents

▼
The involvement
of more than
125 govern-
mental, non
profit organiza-
tions and
businesses in
this partnership
program
provided long
lasting
educational and
cooperative
benefits.

San Francisco Bay Area, California, continued

many of the materials were translated into Chinese, Vietnamese and Spanish.

Program Strengths

The campaign focused on the top of the waste hierarchy (source reduction) and on closing the recycling loop (buy recycled) - two areas traditionally left out of many recycling programs. It also is the first recycling-related campaign in the Bay Area to be conducted on a regional level. Since most media outlets operate on this level, the campaign was able to maximize media coverage with a minimum of effort.

Lessons Learned

The Shop Smart campaign raised community awareness about the importance of source reduction and buying recycled products by reaching more than 1 million residents. The involvement of more than 125

governmental, non-profit organizations and businesses in this partnership program provided long lasting educational and cooperative benefits. The partnerships also extended to a number of other organizations, including several Conservation Corps, churches, schools and scout groups, who provided volunteers for this effort.

The program is easily replicable in other regions. A number of other cities and counties have been particularly impressed with how the partnership aspect of this campaign can help local governments maximize resources, and have approached the partnership to discuss implementing similar campaigns in their local jurisdictions. For example, the cities of South Lake Tahoe and Los Angeles have already implemented versions of the Shop Smart campaign, and local governments representing more than 40 cities have asked for materials and information about the campaign.

case study 4

education programs
for residents

Hillsborough County, Florida

Population: 833,000 residents

Type: Urban, suburban, agricultural.

Contact: Mary Chernesky, County Extension Director, 5339 S. County Rd. 579, Seffner, Florida 33584, (p) 813/744-5519; (f) 813/744-5776.

Goal/Impetus:

In 1988, the state of Florida passed legislation that mandated recycling and set a waste reduction goal. The legislation also provided grant resources to help fund educational efforts for source reduction, reuse and recycling. In response, the County of Hillsborough established the 4-H Kid Power Can Do program, a youth education initiative that aims to reduce the amount of solid and hazardous waste sent to disposal. The County Solid Waste Department, in cooperation with the County Extension Office, initi-

ated the program. Presently, only programs targeting residents are in place.

Strategy:

The 4-H Kid Power Can Do after-school and summer program focuses on waste reduction education for children ages 6 through 12. The program promotes learning by "doing" - all of the exhibits and lessons are interactive. The programs consist of four lessons:

Lesson 1: Teaches children about the 3 R's: Reduce, Reuse and Recycle.

Lesson 2: Focuses on benefits of recycling.

Lesson 3: Takes children Enviro-Shopping.

Lesson 4: Shows children how they can compost yard trimmings and kitchen waste and how to use worm bins.

The program is offered to any interested children. The 4-H Program Coordinators usually contact different youth organizations, such as girls and boys clubs and schools to set up the presentations. Special effort is

made to offer the program to children in low-income communities. Every year, several thousand children participate and learn about recycling and what they can do to prevent waste. The county uses displays in public places and videos aired on Government Access Television to promote the program. The county also has formed alliances with other organizations in and outside the county to exchange ideas and incorporate different stakeholders into the program.

Resources:

Used

The 4-H Kid Power Can Do program has 1.5 FTE staff support plus a coordinator who is employed by the University of Florida and devotes 35% of her time to the program. In total, the county dedicates \$50,000 to the program.

Available

Hillsborough County invites other communities to use their written materials and displays. For the youth program, the following materials have been developed.

- *Vermicomposting - Let the Worms Do It* slide show.
- *Hazardous Chemicals in the Home & Garden* - videotape and slide show with trainer's guide activities.
- *Enviro-Cam-A Visit to the Supermarket* - videotape.
- *Yard Trash to Garden Treasure* - videotape.
- 22 TV Recycling PSA Spots, 30-60 seconds each.
- *4-H Kid Power Can Do Recycling* - videotape.
- *4-H Kid Power* - booklet.
- *You Can Be An Enviroshopper* - pamphlet.
- *Keep Your Trash Clean - Then Recycle It* - pamphlet.
- *Waste Reduction Source Book* - folder to hold publications.
- *Enviro Quiz* for grocery store, garden store and youth audiences.
- Master Composter Curriculum.

Outcomes:

Evaluation

As part of the program, the children are tested before the program to establish baseline information and afterwards to determine what they have learned. The tests show that the children's knowledge of source reduction, reuse and recycling increases as a result of the program. Telephone surveys with a sampling of families showed that 85% noticed changes in the way their children handled trash, 76% of the parents made changes as a result of the program, 56% of the parents learned new information from their children, 35% purchased items that can be recycled, 26% purchased items made from recycled products, and 20% purchased items with the least amount of packaging.

Barriers Encountered

Limited staff cannot meet the overwhelming demand for the program's presentations.

Program Strengths

Children appreciate the hands-on approach to learning about source reduction and recycling. Also, children take home what they learn during the program and educate their families.

Lessons Learned

Youth organizations are interested in offering environmental programs to the children that participate in their programs. The 4-H Kid Power Can Do Program Coordinator advises communities to work closely with a curriculum specialist to ensure that the program is run effectively and that it meets the state's minimum requirement for credit, thereby encouraging its use by teachers and schools.

▼
Children appreciate the hands-on approach to learning about source reduction and recycling. Also, children take home what they learn and educate their families.

section IV

education and technical assistance programs for businesses overview

Local governments across the country use a variety of methods to reach out to businesses with the source reduction message. These generally fall into the following categories:

Program Types:

- **Educational workshops** about source reduction, often co-sponsored by industry trade associations or chambers of commerce. Some smaller programs simply make source reduction literature available to businesses in the community;
- **Peer match programs** encouraging interaction between business people who have implemented successful source reduction programs and those interested in doing so;
- **Incentive or award programs** to encourage the use of source reduction as a business strategy;
- **Technical assistance** in the form of waste audits and one-to-one interaction. The assistance may be offered by government employees and/or consultants employed by the government entity.

Lessons Learned:

- Use recycling as an introductory way to get acquainted with businesses, understand their waste issues and open the door for discussions about source reduction.
- Speak the language of your targeted business. Know the business you are targeting and their waste management challenges. Taking along a source reduction champion from the same business field when meeting with a company is a useful strategy.
- Encourage and promote partnerships. Work with business trade associations, the local chamber of commerce, economic development programs or other businesses which have successfully implemented source reduction to build the necessary trust level.
- Emphasize education and outreach efforts and use the media to create awareness of source reduction successes. Source reduction is a relatively new concept and needs to be promoted. The message cannot be repeated too often. Use case studies of dollar savings in comparable businesses as much as possible.
- Take a hands-on approach. Encourage businesses to consider how the positive environmental benefits of source reduction can enhance their

community relations strategy as well as their overall business strategy. Follow up on a regular basis to assess results and encourage additional efforts.

- Set up effective ways to measure results. It is important to establish baseline data and methods to measure progress.

Program Examples:

Educational Workshops and Programs:

- **Los Angeles, California** holds waste reduction education workshops for businesses, including packaging reduction workshops for designers, retailers, shippers and others. The Integrated Solid Waste Office has developed how-to guides and other printed materials for distribution.
- **Cumberland County, New Jersey** conducts seminars for businesses on building partnerships within the community and promoting information exchange. The workshops stress the economic advantages of source reduction and the latest trends, developments and forecasts.
- In **New York City, New York**, the Council on the Environment New York City, the Department of Sanitation and Empire State Development teamed up to help businesses in the region reduce waste, with specific waste prevention initiatives enacted by Home Box Office, Columbia University and Kinney Shoe Corporation. These organizations are preventing an average of 670 cubic yards of waste per year per organization, which is an 11% average reduction in waste and a combined savings of over \$700,000.

Peer Match:

- **Broome County, New York** has established a Business and Industry Task Force that meets monthly to share ideas, present videos and arrange tours of other businesses. Representatives of companies in the county report their success in preventing waste in an effort to inspire and challenge others to develop and expand waste reduction programs.

Incentive/Awards Programs:

- **Pinellas County, Florida** gives business awards for waste reduction efforts that create awareness of and educate the public about the positive environmental

education and technical assistance programs for businesses overview, continued

impact of source reduction, reuse and recycling.

- **King County, Washington's Green Works Business Recognition Program** is a county-wide recognition program that publicizes efforts by businesses to reduce waste, recycle and purchase recycled products. Businesses must meet established criteria, which include implementing three source reduction strategies, recycling 40% of the wastestream and using three recycled products. Green Works can assist businesses in establishing or enhancing their source reduction and recycling programs.

Technical Assistance:

- **Ramsey County, Minnesota** has established a Business Waste Assistance Program to encourage reduction in the volume and/or toxicity of waste generated by businesses and institutions in the county. The county offers on-site consultation and assistance to business waste generators and provides materials exchange opportunities. Focus group results have indicated an increasing awareness of source reduction as a waste prevention strategy and

practice, credited in part to aggressive promotion and outreach, partnerships with other organizations, and adequate funding and staffing levels dedicated to source reduction programs.

- **Escambia County, Florida** used Department of Labor Standard Industrial Codes (SIC) to identify and contact those businesses with greatest potential for generating waste, including auto garages, print shops, and paint shops. The office conducts telephone interviews, followed by a site visit to perform an audit and determine the best approach for waste reduction.
- **New York City's (NYC) WasteLe\$\$ Program**, a program co-funded by the NYC Department of Sanitation, U.S. EPA, and New York State Energy Research and Development Authority, is a project helping approximately 25 companies with on-site assessments and extensive technical assistance. This program also produces industry-specific guides, seminars, and videos that provide the tools needed to motivate and assist business waste prevention practices citywide.

case study 1

education and technical
assistance programs
for businesses

Snohomish County, Washington

Population: 525,000

Type: Eastern portion is rural with bulk of population along western edge of county. Everett is 30 miles north of Seattle and is the county seat with population of 79,000.

Contact: Suellen Mele, Snohomish County Public Works, Solid Waste Management Division, Wall Street Building, 5th Floor, 2930 Wetmore Ave., Everett, WA 98201, (p) 206/388-6484, 800/562-4367; (f) 206/259-4945.

Goal/Impetus:

The Washington State legislature passed The Waste Not Washington Act in 1989, establishing waste prevention

and recycling as priorities for the state and setting a 50% recycling goal. Business participation is encouraged, but voluntary. Snohomish County embarked on a ten-month effort, beginning in 1994, working directly to match packaging specialists with businesses during 1995. Goals were to decrease packaging waste and save money for participating businesses. The project grew out of the staff's experience with waste audits of businesses throughout the county showing that packaging comprises a large percentage of the wastestream.

Strategy:

Snohomish County Solid Waste Management Division hired environmental consultants to direct the project, assisted by donated services from packaging experts and vendors. The project provided different types of

businesses, large and small, with technical assistance to help identify opportunities to improve the economic and environmental benefits of packaging, while maintaining functionality and performance requirements.

Following interviews to determine local packaging issues, the county selected 26 companies to receive direct technical assistance. Transport packaging - the packaging used to ship goods from one place to another - became the focus of the project, because it makes up a large portion of the wastestream. Sixteen companies made packaging changes, ranging from small ones - using smaller bags or thinner strapping - to major changes like developing new packaging or using reusable totes. The project participants documented savings of more than \$443,000 in the first year.

As part of its outreach to businesses, the project team developed user-friendly case studies, reached 150 businesses with presentations about the project at business and trade association meetings, distributed a guidebook, and wrote an article about the project for *Resource Recycling Magazine's* September, 1996 issue.

Resources:

Used

The county spent \$31,000 to hire environmental consultants and the county's Project Manager spent one-fourth of his time for a year. The county leveraged major savings through donated services by packaging vendors and other experts from both businesses and the county.

Available

A 30-page guide entitled *Prevent Packaging Waste: A Practical Guide for Cost Savings and Environmental Benefits of Re-evaluating Business Packaging*, is available for handling costs (\$2.50). The guide contains useful information about costs and problems of packaging waste, waste prevention tips and principles, lists of packaging vendors and other resources, and six case studies of various businesses.

Outcomes:

Evaluation

The project met its goals regarding the number of participating companies, information shared, and dollars

saved. In May of 1996, the project received a Washington Department of Ecology award for the most innovative waste reduction and recycling program. The county has received requests for the guide from across the country so the project will have more than a local impact.

Barriers Encountered

The consultants working with businesses made it clear that the companies were not required to participate - their technical assistance services were available on a voluntary basis. The consultants made ongoing efforts to get businesses to participate, make packaging changes and document dollars saved in the ten-month window of opportunity that the project provided. Some vendors of packaging materials were not happy when they perceived that the packaging reductions caused them to lose business.

Program Strengths

Partnering with businesses and working through industry groups and trade associations was key to the success of this project. Using a hands-on approach to show businesses the benefits of changing their packaging also was important. Since packaging waste is a growing segment of solid waste (a doubling in amount since 1960, according to U.S. EPA), reducing the amount disposed made a real difference both for businesses and the community.

Lessons Learned

This project demonstrated that the greatest opportunity for success was in the manufacturing sector. Manufacturers were able to impact transport packaging from their suppliers to their customers. Companies initially agreed to participate in the project primarily because of the efficiency and cost savings aspects of reducing their transport packaging.

The project demonstrated the success of using donated services from industry packaging engineers. Businesses received a free "second opinion" about their packaging, the packaging engineers were able to demonstrate their expertise to potential customers, and the county maximized its investment in the program. This was a win-win-win approach that was the "right idea at the right time," and is being leveraged throughout the region and the country.

▼
Companies initially agreed to participate in the program because of the efficiency and cost-saving aspects of reducing their transport packaging.

case study 2

education and technical
assistance programs
for businesses



Do not
overwhelm
businesses with
too many
suggestions at
first. Initially,
present a few
ideas that
represent
easy-to-implement
techniques
that will help
achieve source
reduction goals.

40

City of Austin, Texas

Population: 500,000

Type: Urban.

Contact: Robert L. Fernandez, R.E.P.,
Manager, Waste Reduction Assistance
Program, City of Austin, Solid Waste Services,
P.O. Box 1088, Austin, TX 78767,
(p) 512/499-2737; (f) 512/499-1999.

Goal/Impetus:

The Waste Reduction Assistance Program (WRAP) provides local businesses with technical assistance to achieve reductions in the quantity and toxicity of waste generated. This is accomplished in three ways: on-site assessments, material exchanges, and a business information clearinghouse. While small businesses were originally targeted for this service, medium and large businesses frequently receive assistance as well.

In 1991, the Texas State Legislature set a voluntary 40% reduction goal for the amount of waste disposed in landfills by the year 2000. Two years later, the Austin City Council directed the City of Austin's Solid Waste Services to expand its operations and offer waste reduction assistance to Austin area businesses. In 1994, the Austin City Council amended the budget of the Solid Waste Services Department to provide funding for the Waste Reduction Assistance Program.

Strategy:

Businesses, especially small businesses, often do not have the resources to explore alternative strategies that would reduce the need for waste disposal and treatment. In order to help businesses reduce the quantity and toxicity of their wastestream, waste reduction assistance staff conduct site assessments, facilitate material exchanges, and operate a business information clearinghouse.

During a site assessment, staff works with businesses to develop economically and logistically feasible reduction opportunities. All stages of the company's operations are considered, from supply procurement through production to waste disposal. After the site assessment, WRAP staff presents a report with waste reduction suggestions. While recycling is an important facet of any waste management plan, source reduction and reuse are the preferred options.

The material exchange is a program where staff connects companies that have "waste" materials with companies that want to use these items. Rather than file listings of materials on a database, staff matches up companies directly.

Finally, the business information clearinghouse serves businesses that need information about various waste management issues. If a business has questions about which companies will recycle a certain type of material, where to locate specific recycling equipment, or pertinent environmental regulations, WRAP staff will research these issues and respond with the information needed.

Resources:**Used**

A container fee levied on each refuse dumpster and refuse truck placed or operated within the city limits of Austin is the funding source for the program. A portion of the monthly \$3.00 fee reimburses the General Fund for 100% of the program's annual operating budget (\$158,176). Funding was initially available from a U.S. EPA grant and a Texas Natural Resource Conservation Commission grant.

Three full-time staff members perform all functions necessary to provide waste reduction technical assistance to businesses.

Available

WRAP developed a series of nine laminated 11" x 17" waste reduction tip sheets, including: *Autobody Repair Shops, Automotive Service Shops, Lithographic Printers, Screen Printers, Hotels/Motels, Offices, Solvents and Cleaning Processes, and Hazardous Material Handling*. In addition, a poster is available that addresses the reduction of paper waste through double-sided copying.

Outcomes:**Evaluation**

The main purpose of the WRAP is to educate businesses about waste reduction opportunities in their facilities. Toward that end, the main criteria for success include the number of site assessments, material exchanges, presentations and workshops conducted. Since 1995, WRAP staff has helped prevent and divert 1,352 tons and saved Austin small businesses more than \$472,000.

Barriers Encountered

Shifting the focus of solid waste management from the end-of-the-pipe to the beginning of a production process is definitely a challenge. The familiarity of landfilling and recycling often overshadow source reduction. Another significant barrier to waste reduction in Austin is the low tipping fee, \$13.50/ton. In some instances, throwing away materials may be the cheapest alternative from an economic standpoint.

Program Strengths

Developing cooperative, rather than adversarial, relationships with the business community, demonstrating creativity, and having team members with varying,

complementary backgrounds have helped the program grow and flourish.

Lessons Learned

Emphasize the financial benefits of source reduction. While many companies may not be persuaded by the environmental benefits source reduction measures provide, most businesses will implement these measures if it saves money. Also, do not overwhelm businesses with too many suggestions at first. Initially, present a few ideas that represent easy-to-implement techniques that will help achieve waste reduction goals. After businesses implement the easiest ideas and realize success, they may be interested in exploring other source reduction options.

Mecklenburg County, North Carolina

Population: 600,000 residents. 18,000 businesses (banking is the largest sector).

Type: Urban. Charlotte is the largest city.

Contact: Brenda Barger, Source Reduction Program Manager, Mecklenburg County Department of Engineering, 700 N. Tryon Street, Charlotte, NC 28202, (p) 704/336-4279; (f) 704/336-3846.

Goal/Impetus:

The State of North Carolina has a per capita solid waste reduction goal of 40% via recycling by the year 2001. The state recently altered the mandate to include source reduction and reuse strategies to achieve this goal. Mecklenburg County has maintained a drop-off recycling program since the mid-1970's and began a comprehensive residential curbside program in 1989. In the process of expanding outreach to the commercial sector, the Mecklenburg Department of Engineering reorganized staff and programs to adopt waste reduction as the top priority with the commer-

cial sector. A Source Reduction Program Manager position was created and assigned staff to provide education and outreach to the commercial sector.

Strategy:

After the department's reorganization to incorporate source reduction, a survey of local businesses was conducted to determine their level of awareness about the topic. The survey helped to define terminology best suited for business and the contents for two workshops held in 1993-94. Paid advertising in newspapers helped build attendance and speakers were recruited from both the commercial sector and other waste management organizations. The program invited vendors of environmental products and services to provide networking opportunities.

In 1995, the contents of the workshops were compiled into a Source Reduction Kit. The kit was selectively distributed to businesses through independent Rotary Clubs in Mecklenburg County. Recipients of the Source Reduction Kit commit to implementing a program, are entered into the program's database, and are targeted for future efforts. On-site visits to perform waste assessments and more involved

case study 3

education and technical assistance programs for businesses

▼
Assisting a business with recycling may develop a long-term relationship that can further source reduction projects in the future.

MacKlenburg County, North Carolina - continued

waste characterizations are made upon request.

The program is now in the process of drafting a Source Reduction Plan for the county to better guide all activities towards the state's 40% reduction goal.

Resources:

Used

The Source Reduction Program has a staff of four including a Source Reduction Program Manager. Program activities operate under a \$150,000 annual budget, excluding salaries. The North Carolina Division of Pollution Prevention and Environmental Assistance provided technical resources (fact sheets and manuals related to waste reduction) for the program's workshops.

Available

The Source Reduction Kit is in a file folder format containing worksheets, source reduction case studies, a waste reduction checklist, and a list of local recycling market and drop-off locations. On a quarterly basis the program produces "Trash Flash," a newsletter geared for businesses on solid waste management issues including a focus on source reduction.

Outcomes:

Evaluation

Since 1995, 1,200 Source Reduction Kits have been distributed. Staff has performed twelve waste assessments and three waste sorts. A survey is underway to quantify the programs implemented by recipients of the kit. Landfill diversion rates are monitored by the department, but due to recent changes in calculation methods, source reduction numbers for the county have not been determined. Also, "Trash Flash" is mailed quarterly to more than 2,000 businesses.

Barriers Encountered

The success of recycling programs in both the public and private sectors has created an attitude that "there is nothing more to do." This is overcome by partnering projects (workshops, kit) with businesses that have

accomplished waste reduction and are credible to the commercial sector. As a government agency, the program gained credibility by partnering with the business community to accomplish its outreach.

Terminology was a barrier to the development of the program. A survey of businesses indicated a questionable attitude towards the terms "waste audit" and "source reduction." In response, the program used the term "waste reduction" in all its outreach as it more clearly suggests achieving waste diversion or elimination. "Assessment" is used in place of "audit" as audit is more recognized with accounting practices, not waste generation.

Program Strengths

The Source Reduction Kit has helped build trust between the agency and the business community. The quality of the information lends credibility to the program and the staff's ability to respond one-on-one via on-site assessments has shown a real commitment to their work and reducing waste in the commercial sector.

Lessons Learned

Programs should not promise too much. If technical services such as waste assessments and waste sorts are advertised, these services must have the staff and resources to follow through. Smaller companies (16 employees or fewer) used the kit effectively without assistance. Larger companies required assistance from beginning to end, probably due to the complexities of multiple shifts and the necessity of involving many individuals in waste reduction decisions. Although the kit is successful in a limited market, other programs and tools are needed if a noticeable impact is to be achieved. Businesses receiving resources such as the Source Reduction Kit should be surveyed sooner than 6 months to keep the ideas fresh and ensure that programs are underway. Also, being a purist about preferring source reduction over recycling can limit outreach activities. Assisting a business with recycling may develop a long-term relationship that can further source reduction projects in the future.

Dutchess County, New York

Population: 260,000

Type: Two urban/suburban centers (114,800 residents) and remaining rural (145,200), 6,000 business, the majority of which are service-oriented and retail. Declining manufacturing base.

Contact: Mark Wheeler, Waste Prevention Specialist, Dutchess County Environmental Management Council, P.O. Box 259 Millbrook, NY 12545, (p) 914/677-8223 x112; (f) 914/677-6563; email: mwheeler@cce.cornell.edu; internet web site: www.cce.cornell.edu/dutchess/emc/emc.html

Goal/Impetus:

The Dutchess County Solid Waste Management Plan commits the county to reducing solid waste generation by 10% over the next 20 years (1991 base year) through source reduction education and administrative programs. In 1994, the agency responsible for the county's solid waste management, Dutchess County Resource Recovery Agency, collaborated with Environmental Management Council (EMC) to create a one-year pilot Waste Prevention Program to provide residents, businesses and institutions with resources and technical assistance on source reduction.

The pilot year goals were to develop model projects with county government and one small business, and to conduct two workshops on source reduction for the commercial sector. The models were to demonstrate that source reduction is an effective management option to reduce waste and the cost of materials and/or disposal. In its second year, the county set out to provide waste prevention services to the private sector and education programs to public school classrooms.

Strategy:

The EMC administers the program and the work is performed by a Waste Prevention Specialist. An advisory committee representing the EMC, Resource

Recovery Agency, county services, citizen activists, a local chamber of commerce and the New York State Department of Environmental Conservation (NYSDEC) assists the program in selecting avenues for outreach. In 1995, the county initiated a model waste prevention project through presentations to administrators and by organizing a team for waste audits and other activities. The small business model was solicited directly.

In addition, the specialist secured speaking engagements with various local business associations throughout the year to provide general outreach on the topic of source reduction. These presentations featured source reduction success stories and waste management cost accounting. Two workshops targeted at private and public sector professionals were held.

In 1996, the program developed a formalized menu of services for businesses including:

- waste audits;
- waste prevention planning;
- employee training and production of brochures and education materials.

A Fee-for-Savings agreement is used to entice businesses to undertake an audit and implement source reduction. If savings occur either on the purchasing or disposal end, the program receives a percentage of the savings as a service fee. Business are recruited via on-going presentations to local associations.

Resources:

Used

The Program is staffed by a full time Waste Prevention Specialist. The annual budget for the program is \$25,000. Funding is provided by grants from a combination of sources, primarily the Resource Recovery Agency. Grant dollars from U.S. EPA and NYDEC are dedicated toward specific activities including the production of factsheets, workshop materials and a directory of local reuse/repair options. Due to the loss of flow control and reduced tipping fee revenues, these resources may not be available for the program in the future.

Available

The Dutchess County *Waste Prevention Guide* is available along with consumer education brochures and Smart

case study 4

.....
education and technical assistance programs for businesses

▼
Know the business community's language.

Source reduction involves increased efficiency, conservation of resources, and effective use of time and labor -- all of which are important to business today.

Dutchess County, New York, continued

Shopping and Junk Mail Prevention Kits. Businesses are routinely provided with materials such as:

- U.S. EPA's *Waste Prevention Pays Off*;
- U.S. EPA's *Business Guide for Reducing Solid Waste*;
- INFORM's *Waste Prevention Fact Sheet*;
- INFORM's *Source Reduction Planning Checklist*.

The EMC's web page has a section devoted to waste prevention:

www.cce.cornell.edu/dutchess/emc/emc.html

Outcomes:

Evaluation

Since 1995, approximately 10 on-site waste audits have been conducted for businesses. Following each assessment, staff prepares a waste prevention report of findings and recommendations and presents them directly to the business contact(s). Five of the 10 companies have implemented source reduction activities. The remaining businesses have followed recommendations to improve waste disposal contracts and/or improve recycling programs. Businesses that received assistance report cost-savings in procurement and/or avoided disposal. Final cost figures will be released in late 1996.

The county's Office of Information Technology is evaluating paper use reduction and cost savings in paper purchases by the county. This office is redesigning mainframe-generated reports to eliminate duplicate reports and excess paper. The Program's first Fee-for-Savings agreement work is underway with a local private school and should be completed by the Fall 1997.

Barriers Encountered

In almost every instance, each company had failed attempts at recycling. It was important to them that problems in recycling be corrected before undertaking source reduction efforts. This has given staff the time to develop relationships with the businesses. Terminology is also a strong barrier to dealing with business. The word for "waste" is different from business sector to sector. Knowing the language of the business is very important, otherwise the goals of source reduction can get lost.

Program Strengths

The program, although new, has credibility because of the reputation of the agencies who created it and the connections of its advisory committee to the community, school and business leaders of the county. Also, the program works with business associations to market the program and to receive direct assistance with waste management concerns.

Lessons Learned

Identify all the channels available for reaching out to the business community including business associations and economic development initiatives in your community. Know the business' language. Source reduction involves increased efficiency, conservation of resources, and effective use of time and labor - all of which are important to businesses today. Package this message in familiar terms.

Be sure to incorporate measurement of waste reduced, material eliminated, dollars saved, reductions in labor time, and attitude changes. Help companies understand how to measure progress reducing waste.

section V

materials salvage, reuse and exchange programs⁵ overview

Thrift stores, charities, flea markets, and maintenance, repair, and rental shops have practiced reuse for decades. Despite this well-developed infrastructure, 25.5 million tons of durable goods were landfilled or incinerated in 1994 — toys, bicycles, mattresses, couches, suitcases, appliances, computers⁶. These discards contain tremendous untapped wealth. Industrial wastes present even larger volumes. In Washington State alone, 1992 estimates of industrial waste generation were seven times that of municipal solid waste, while construction debris generation was estimated at 60% of municipal waste generation. These figures conservatively reflect national statistics. As communities strive to contain solid waste handling costs, meet waste generation goals, and link recycling with economic development, a new generation of reuse operations and strategies has emerged. Local governments are now initiating or supporting programs to divert reusable discards from landfills and incinerators.

Program Types:

- **Materials exchange programs** linking suppliers of unwanted materials with those that can use them, exchanging items such as office equipment and furniture, pallets, packaging materials, plastic items, wood scraps, paint, and fabrics. Programs range from state-of-the-art on-line electronic trading systems to clearinghouse programs with bi-monthly newsletters.
- **Reuse operations** coordinated or operated by local government where used materials such as office equipment, technical equipment, construction materials, and other items are donated and either sold or given away to interested parties.
- **Landfill/transfer station salvage programs** that collect materials headed for the landfill and repair them for reuse or make them available to the community in their current state. Some communities run curbside collection programs to collect unwanted materials prior to their collection for disposal.
- **Public education programs** that promote the

benefits of reuse and opportunities for reuse in the public and private sector.

Lessons Learned:

- Be prepared with information regarding the potential benefits of reuse when planning a program. This will help sell the initiative to the board of supervisors, the public, or others. It may be helpful to incorporate what worked in communities with successful programs.
- Keep waste collection centers and operating facilities neat and organized. When the sites are unorganized, people have trouble finding what they want, and removal rates are lower.
- Before starting a reuse operation, visit a working example to see how it operates and talk to the individuals involved to learn from their experiences.
- Materials exchanges may work best on a regional level, rather than locally, and may require a coordinator to facilitate matches since they may not happen automatically.
- Measure success by more than simply the tons diverted from the landfill, but by the economic benefits such as jobs created or other environmental benefits of the programs.

Program Examples:**Materials Exchanges:**

- **Pitt County, North Carolina** uses a form to link businesses with supplies of materials to those who want them. Wooden pallet exchanges have been the most common.
- **McLean County, Illinois** facilitates the exchange of unwanted, yet usable nonhazardous materials between businesses and other local organizations by maintaining a bi-monthly listing of materials wanted and materials available - the McLean County Business Materials Exchange. The four-page listing is distributed to 2,400 businesses, schools, and other organizations.

⁵ Some of the information in this overview was adapted from *Creating Wealth from Everyday Household Items*, available from the Institute for Local Self-Reliance, 202/232-4108.

⁶ U.S. EPA, 1995 Update, p.49-50.

materials salvage, reuse and exchange programs overview, continued

- **The Town of East Hampton, New York** operates a Home Exchange at its recycling center. Residents are encouraged to leave items that may be reusable. Tons of materials from household appliances to new books have found new homes.
- **Volusia County, Florida** operates a "Swap Shop" targeted at county employees to reduce and eliminate surplus materials in county offices and schools. The county newsletter and e-mail help publicize the program.
- **Grundy County, Illinois** targets post-consumer polystyrene (PS) for reuse. Local residents and business drop off unwanted loose fill PS, PS sheet, and heavy PS "foam" for shipping coolers. The county then teams up with area businesses to promote exchange and reuse of these materials.
- **New York City, New York's** Department of General Services operates a Surplus Program that accepts surplus furniture, equipment such as computers, and other items from Mayoral Agencies. In FY 1995, the Surplus Program redistributed a record \$3.5 million worth of furniture, vehicles and office-related items. In FY 1993, city agencies constructed 60 complete work stations from spare parts and leftovers, saving \$238,000.

Reuse Programs:

- **Los Angeles, California** supports L.A. Shares, a nonprofit reuse operation that collects office furniture and supplies, arts and crafts, toys, tools, paints, and other items, and transfers these materials to nonprofit organizations and schools in the city and Los Angeles County. The city funds about 14% of L.A. Shares' operating budget and provides in-kind services.
- **Clifton, New Jersey** distributed 500 reusable mugs to several "mom and pop" coffee shops throughout the city (sponsored by a grant). The mugs were sold with coffee at a discount. A flyer explaining the importance of source reduction and reuse accompanied each mug sold. After two months of the program, a survey indicated that at least 25% of residents were using reusable mugs.

Collection Programs:

- **Montgomery County, Maryland** accepts textiles, mattresses, and reusable building and construction

materials at drop-off locations at the county transfer station. The county also sponsors a furniture pickup program with the local Housing Opportunities Commission (HOC), an organization serving families who need homes. HOC collects furniture in good condition from residents on an on-call basis, and delivers these the same day to families. In addition, the county collects unwanted clothing weekly from select local charities.

- **Saint Paul, Minnesota** in conjunction with the St. Paul Neighborhood Energy Consortium, the local recycling hauler (SuperCycle), and Goodwill Industries/Easter Seal Society, operates a unique curbside collection program that collects textiles and reusable household items at the same time as more conventional recyclable materials.
- **The City of Berkeley, California** coordinates with a local salvage and reuse retail enterprise, Urban Ore, to collect reusable items at curbside the day before the city's annual bulk trash collection day.

Landfill/Transfer Station Salvage Programs:

- **Duluth, Minnesota** retrieves bicycles from loads going into the landfill and restores them to usable condition. Bikes are then given to children who cannot afford new ones. Partners include the local Rotary group and boys and girls club.
- **Calaveras County, California** supervises a Salvation Army trailer at its landfill. County workers direct citizens to load their reusable items into the trailer and call the Salvation Army when the trailer is full. The partnership allows the Salvation Army to bolster its collections without adding staff and diverts about 4 tons per month of reusable items from the landfill at no cost to county residents.
- **The City of Berkeley** allows Urban Ore to salvage materials directly from the tipping floor at its transfer station. Urban Ore salvages more than 600 tons per year at the transfer station.
- **Sonoma County, California** contracts with Garbage Reincarnation to provide recycling/reuse depots at its landfill and transfer station. The depot at the landfill features a "wild west" retail operation called Recycletown. About half of the estimated 300 self haulers going to the landfill each day stop at Recycletown to unload reusable or recyclable items.

Southeast Minnesota Recyclers' Exchange (SEMREX), eleven counties in Southeast Minnesota.

Population: Area actively served is 384,000; passive service area is 4 million.

Type: Primarily rural and agricultural in nature, with a strong industrial component.

Contact: Beverly Marshall, SEMREX Materials Exchange Coordinator, 171 W 3rd, St. Winona, MN 55987, (p) 507/457-6464; (f) 507/457-6469; Susan Waughtal, SEMREX Marketing Coordinator, 856 5th Ave, SE, Rochester, MN 55904, (p) 507/252-0750; (f) 507/252-9536.

Goal/Impetus:

The Southeast Minnesota Recyclers' Exchange (SEMREX) is an active, county-based exchange that assists the region's commercial/industrial sector in their waste minimization efforts. Comprised of recycling coordinators from southeast Minnesota counties, SEMREX began as an information sharing group in 1989. SEMREX members initiated cooperative marketing of the region's curbside recyclables in 1992. Based on the success of this venture, the group expanded into marketing the recyclable materials from the region's commercial/ industrial sector.

Given SEMREX's existing involvement in marketing for the private sector, it was a natural step to offer the businesses materials exchange services. In addition to improving private industry's bottom line, SEMREX members knew that materials exchange services also had the potential to increase the recyclables marketed through SEMREX. To this end, SEMREX expanded its mission to incorporate a materials exchange in 1993.

Strategy:

The SEMREX Exchange Coordinator conducts free waste evaluations for the region's businesses, providing tailored source reduction information, directing them to the SEMREX Marketing Coordinator for those materials that are recyclable, and compiling exchange listings for those materials that are best exchanged. Additionally, this materials exchange is promoted by participation in trade shows, job fairs and waste expo-

sitions. SEMREX staff has been averaging one event per week in the eleven county area.

The SEMREX Materials Exchange is the most active exchange of the Minnesota Materials Exchange Alliance, a network of five exchanges that serve businesses in 32 of the state's 87 counties.

Resources:

Used

Initially assisted with a \$30,000 state grant from the Minnesota Office of Environmental Assistance (OEA), SEMREX in the second year moved toward funding marketing operations through private sector contributions. By the end of the second year, the counties agreed to a 10% fee for services of the Marketing Coordinator, making the cooperative marketing project entirely self-supporting.

SEMREX then launched a promotional campaign of their materials exchange. The Materials Exchange Coordinator is an AmeriCorps*VISTA member, whom the group received through the National Recycling Coalition's 1995 Recycling to Build Community project with the Corporation for National Service. County staff assist the coordinator with the waste evaluations and catalog mailings for their respective counties. SEMREX also is looking forward to a second full-time AmeriCorps*VISTA in 1997. The local Chambers of Commerce, of which SEMREX is a member, and the state Chamber's WasteWi\$e Program are important partners in the materials exchange.

Available

Resources include a free exchange listings catalog, funded by the Minnesota Technical Assistance Program (MnTAP) and the Minnesota OEA. The catalog is mailed to every business in the SEMREX region on a bi-annual basis. A tri-fold brochure describing SEMREX services and membership is distributed at all promotional events. Additionally, SEMREX has produced a *Materials Exchange Operations Manual* that includes tracking and listing forms, as well as fact sheets and case studies. This manual is available upon request to interested state and local organizations, as are the group's bylaws and operating rules.

case study 1

.....
materials salvage,
reuse and exchange
programs

▼
Personal
contact with
businesses on
an on-going
basis is
essential.

Southeast Minnesota Recyclers' Exchange (SEMREX), continued

Outcomes:

Evaluation

Prior to October 1995, coordination of the Materials Exchange was done on a part-time, as needed basis. In the eight months since hiring the AmeriCorps* VISTA, whose time was dedicated exclusively to materials exchange, listings and inquiries have increased 400%, and the number of successful transactions have increased nearly five fold.

Barriers Encountered

Printing deadlines for the catalog mean that some materials in any given issue of the catalog will no longer be available. To remedy this the alliance is pursuing the development of a site on the world wide web to access up-to-date listings.

Program Strengths

The networking capacity of the many county staff members and the financial resources of the counties provides support to the project when necessary. Also,

the willingness of the Exchange Coordinator to actively pursue listings and make exchanges is key to this program's success.

One success story is a bubble bath manufacturer that generates 2,000 gallons a month of surplus soap as a result of rinsing out the bottling lines before using another color. SEMREX worked with a trade association to find car washes that have successfully substituted this soap for their far more expensive automotive brand. For the soap manufacturer, this exchange not only resolved a sewage treatment dilemma, but also resulted in additional dollars in their pocket.

Lessons Learned

In SEMREX's experience, a passive exchange program, without a high-profile presence in the communities served, cannot sustain itself. The concept of exchanging low value materials does not come easy to businesses caught up in their day-to-day operations, and personal contact with businesses on an on-going basis is essential.

City of New York, New York

Population: 7,000,000

Type: Urban.

Contact: Susan Glass, Director, City of New York Materials for the Arts, 410 West 16th St., New York, NY 10011, (p) 212/255-5924; (f) 212/924-1925.

Goal/Impetus:

Established in 1979, Materials for the Arts (MFA) is a collaboration of the New York City Department of Sanitation and Department of Cultural Affairs. The program's goal is to divert usable office equipment and supplies, furniture, construction materials, industrial by-products, paint, fabric and more from the landfill to more than 1,300 cultural organizations, community, health and social services with art programs and city agencies. Donations come from more than 1,000 businesses and individuals in New York City. Contributions have included desks, chairs, drafting tables, copiers, computers, telephone systems, fabric, trim, paper, art/film/video equipment, industrial by-products, and construction materials. Contributions are used to improve facilities, teach classes, create theatrical sets, construct cultural displays, and present art work.

Strategy:

MFA operates a centrally-located 10,000 square foot warehouse where donated materials are received and inventoried. Most donated materials are picked up by MFA's crew and truck by appointment. Donors receive written documentation for tax deduction purposes. Eligible recipients make appointments to view and select needed materials at no cost. Eligibility is limited to non-profit arts programs within New York City. Some materials are directly brokered rather than physically handled by MFA.

Resources:

Used

MFA is funded by the City of New York. The Department of Sanitation and Cultural Affairs budgeted approximately \$350,000 in fiscal year

1995-96. This provides for a staff of eight, warehouse rental space, utilities, trucks, a van, a computerized inventory/donation record system, and general operating expenses.

Available

Brochures and fact sheets describe the program. Also, a publication entitled *Starting A Materials Donation Program: A Step-By-Step Guide* is available for free. The publication was funded by the U.S. EPA.

Outcomes:

Evaluation

Tonnage processed by MFA has been increasing over time, with 428 tons reported in FY 1995 and 437 tons processed in FY 1996. Likewise, the number of arts and cultural programs served has increased over time, with an estimated \$2.3 million donated to approximately 1,300 non-profit arts and cultural programs.

Barriers Encountered

The largest barrier to MFA's success is lack of awareness of the total benefit of the program to the community. To realize the overall benefits of reuse programs, individuals must take into account resource conservation benefits, avoided disposal costs for businesses and individuals, reduced purchasing costs, process savings, and other economic benefits.

Program Strengths

In addition to diverting materials from the landfill, the program serves an important solid waste educational role and generates substantial material benefit for the arts community. Also, a percentage of the goods are provided to government agencies, saving valuable resources and reducing waste. MFA requires recipients to write thank you letters to their donors so the donors realize the wide variety of services their community offers and recognize the assistance they have contributed. This also encourages future participation.

Lessons Learned

There are untapped opportunities for expanding the program and building upon its success. The City of New York has limited capacity to fund the program and therefore, MFA is seeking funds from the private

case study 2

materials salvage, reuse and exchange programs

▼
It is key to inform reusable goods donors about how their materials were used to encourage their continued support in the future.

New York City, New York, continued

sector to increase the size of the program and expand outreach to not only more donors but the NYC Board of Education teachers. This is significant as it will increase the tonnage level thereby decreasing the cost per ton of operating the program for the city.

To increase efficiency, part of the funding from the Department of Sanitation pays for a Direct Donations Coordinator to arrange donation of goods directly between the generator and recipient, saving warehouse space for MFA and the cost of picking up goods from donors. Having a warehouse and direct linkage

between donors and recipients has proven to be of value to the overall operation. It also is important for the public to be educated regarding the broader benefits of reuse efforts, such as economic benefits to the community and the important environmental benefits. Reuse programs such as MFA can have an enormous impact on the community. Once people reuse an item, they often will practice reuse in the future and encourage others to do so. It also is key to inform donors how their materials were reused to encourage their continued support in the future.

case study 3

.....
materials salvage,
reuse and exchange
programs

▼
Before
establishing a
program, visit
a working
example to
learn from the
experiences of
those involved
and apply the
lessons they
have learned.

Chatham County, North Carolina

Population: 42,000

Type: Rural

Contact: Lynn Weller, Recycling
Coordinator, Chatham County Recycles,
P.O. Box 87, Pittsboro, NC 27312,
(p) 919-542-8200; (f) 919-542-8272.

Goal/Impetus:

The Chatham County "Swap Shops" are a project of the Chatham County Recycling Department. The county created the Swap Shops in response to its County Solid Waste Management Task Force's desire to promote reuse, and citizen pressure for a way to keep usable items out of the landfill. The county integrated the Swap Shops into the design of its new solid waste and recycling collection centers.

The goal of the program is to divert the greatest amount of usable items possible from the wastestream. To do this, the recycling staff are planning increased public education initiatives in an effort to maximize reuse in the county.

Strategy:

After the Task Force convinced the county that this program would effectively reduce disposal costs, the first

Swap Shop was opened in April 1993. Swap Shops are now located at all of the county's 12 solid waste collection centers. Residents of the county are required to self-haul their waste and recyclables to these staffed centers. Residents leave their unwanted but usable furniture, hand tools, toys, sporting equipment, shoes, boots, household items and clothing in the Swap Shops where other residents pick them up for reuse. Items that are not swapped within two weeks are transferred to the local thrift shop or mission.

There is currently no special marketing for the Swap Shops at this time. The presence of attractive, well-kept buildings at the county solid waste collection centers has been the best advertisement. Word-of-mouth has spread the information throughout the county.

Resources:**Used**

The 130 square feet Swap Shop buildings cost \$6,500 - \$8,000 each to build, and are located on land that is already owned or leased by the county. Operating costs for the program are negligible because many Swap Shop activities are piggy-backed on regular responsibilities of the solid waste and recycling staff. There are 35 full and part-time workers staffing the collection centers, spending roughly 5% of their time tending to the Swap Shops, equal to about one full time equivalent (FTE) at \$5.00 per hour, plus benefits.

Available

Brochures and a fact sheet describe the program. Recycling department staff are interested in sharing their experiences with other agencies that may want to replicate the program.

Outcomes:

Evaluation

The program is being measured by the amount of materials swapped and otherwise diverted from the wastestream. The Solid Waste Department currently does not have data available on the amount of materials being reused, though staff is investigating different ways to estimate the diversion. Approximately 1,200 lbs. of textiles or clothing were brought to a local mission for reuse each month during 1995. Staff estimates that 60% of the items in the shops are being reused in the county, 30% are transferred to thrift stores, missions, and other outlets for reuse, and only 10% are discarded.

Although the total amount diverted from the wastestream has yet to be quantified, Chatham County considers the program successful, due to the expansion of the program from five to twelve Swap Shops in its first two years, and increased participation.

Barriers Encountered

The largest barrier encountered has been the difficulty

of measuring the amount of material being reused due to this program. The operation also is constrained by liability issues. Power tools, electrical appliances and sharp objects cannot be swapped at the collection center because of liability. Also, residents are not allowed to test any of the Swap Shop items on-site.

Program Strengths

The Swap Shop program has low operating costs. Other than the capital cost of establishing the buildings, they are an easy, inexpensive, and effective way to divert reusable items and materials from the wastestream.

Lessons Learned

In order to sell this type of program to a Board of Supervisors, the public and others, it is important to have information regarding how popular this type of program is in other counties and the cost savings of reuse. It may be helpful to have information from other communities with Swap Shops, and their resulting waste reduction rates and successes. The Swap Shops must be kept neat and organized. When the shops are disorganized, people have trouble finding what they want, and removal rates are lower. Chatham County uses clothing racks, shelving and cubbies to organize the items. Also, before establishing a program, visit a working example to learn from the experiences of those involved and apply the lessons they have learned.

case study 4

materials salvage,
reuse and exchange
programs

Flexibility and
innovation have
overcome
barriers that
might have
otherwise
hindered the
development of
the program.

City of Seattle, Washington, and greater metropolitan area

Population: Approximately 1.5 million

Type: Urban.

Contact: Leeanne Wooden, Environmental Field Specialist Supervisor, City of Seattle Engineering Department, Solid Waste Utility, 8100 2nd Ave South, Seattle, WA 99108, (p) 206/684-7487; (f) 206/233-2632.

Goal/Impetus:

The goal of the program is to divert usable paints and paint products, automotive fluids, and garden fertilizers from the community to citizens, schools, churches, non-profit organizations, and businesses that can reuse the materials.

Strategy:

The City of Seattle Solid Waste Utility has been operating household hazardous waste collection facilities since 1990 as a part of the King County Hazardous Waste Management Program. Utility staff greets users, takes the materials from their vehicles, identifies and sorts the items by category, packs them separately or in bulk and prepares the materials for pickup by a treatment, storage, and disposal company.

Paints, automotive fluids, garden fertilizers and soil amendments are listed in IMEX (Industrial Materials Exchange), a local materials exchange program funded by the King County Hazardous Waste Management Program. IMEX publishes a bi-monthly listings catalog with a circulation of 9,000. The catalog is primarily distributed in western Washington. After reviewing the catalog, interested readers call the utility and request materials. Staff at the utility facilitates the match by making arrangements for pickup.

Resources:

Used

There are seven staff affiliated with the city's house-

hold hazardous waste collection program, with IMEX activities requiring about 1/2 FTE. Making a listing in the IMEX catalog is free.

Available

A paint brochure, sample of IMEX listings, and signs posted at the two collection sites are available.

Outcomes:

Evaluation

Efforts to divert paint, automotive products, and garden fertilizer began in September, 1995. Nearly 50 tons of material have been given to the public, non-profit organizations, and businesses during the first year of operation. This has saved the City of Seattle at least \$30,000 in hazardous waste disposal costs and has distributed at least \$60,000 worth of paint and other products to worthy projects.

Barriers Encountered

Initially, the city wanted to set up a materials exchange on-site, where people could browse through and find reusable items. However, health department restrictions required a separate building, dedicated staff, and additional parking. Consequently, the utility decided to use a bi-monthly catalog to promote material exchange.

Program Strengths

Flexibility and innovation have overcome barriers that might have otherwise hindered the development of the program. For example, when customers balked at four gallon containers for the paint give away, staff located one gallon containers for the effort. As everyone involved becomes comfortable with the program, more products will be added to the catalog and the program will continue to grow and expand.

Lessons Learned

Ensure that there is provision for adequate staffing to keep a project progressing. Investigate the use of community volunteers for phone scheduling and distribution of paint and other materials for reuse.

section VI

at-home composting and grasscycling programs *overview*

Many communities across the United States have turned to at-home composting, grasscycling (i.e. leaving grass clippings on the lawn for decomposition), vermicomposting, and landscape alteration as key elements for developing an effective and comprehensive source reduction program. The size of the community, available legislative support, budgetary constraints, and a range of other factors all contribute to the type of program a community will implement. Some of the more popular program types are described below.

Program Types:

- **Grasscycling or home-composting programs**, that can be very low budget efforts where a community will simply do a direct mailing to residents, or distribute flyers at garden centers, advertising program benefits and procedures.
- **Public education methods** to inform residents about composting options. This can include more extensive initiatives utilizing electronic media, local newspapers, videos available for free at video stores, transit advertising, and direct mail.
- **Providing compost bins to residents**, either as giveaways at workshops, or significantly subsidizing the cost of bins. Selling bins can help support the cost of the program. Some communities offer **rebate programs** as well to encourage the purchase of mulching lawnmowers or other source reduction equipment.
- **Workshops**, which may be the most effective communication vehicles available, providing opportunities for one-on-one training as well as for distributing compost bins. Workshops on composting are held in libraries and community centers, retail stores, and demonstration gardens.
- **Demonstration gardens or display areas** that provide residents hands-on experience with composting, as well as for demonstrating the ease of such techniques.
- **Using trained volunteers** to educate residents about composting. These programs train individuals as "Master Composters" who subsequently train residents. In some communities, homeowners volunteer to designate their lawns or compost bins as demonstration areas, and neighbors may visit

these sites to learn more about successfully operating systems.

- **At-home food composting programs and on-site programs in businesses and institutions** which have achieved success and are being implemented by a wider audience.
- **Vermicomposting** (or worm bins) which is making in-roads nationwide as a means to manage food waste. Currently, it is primarily used as an educational tool in schools, though some other institutions and homeowners are also doing their part. Many school programs rely on commercially-available worm bins, though some jurisdictions build their own.

Lessons Learned:

- **Measure your program.** Large budget programs can perform compositional studies and surveys which reveal data about actual tonnage diverted from disposal due to at-home management of yard trimmings. This type of assessment may be cost prohibitive for smaller programs. In those cases, success can be measured through informal surveys, which can provide trend analyses, information about the number of bins sold or distributed, and the number of people trained as Master Composters or who attend workshops.
- **Take advantage of existing communication vehicles** to publicize your program's progress both in terms of tonnage diverted as well as money saved.
- **Don't limit yourself to one approach.** Employ a variety of strategies to increase participation and achieve success.
- **Seek out partnerships and collaborative efforts** with other organizations or entities.
- **Reinforce the source reduction message** over and over again, year after year.

Program Examples:

- **New York City, New York** has instituted programs to promote grasscycling and backyard composting, working with four botanical gardens in the area. The program worked with nine Housing Authority sites in Brooklyn in 1995 and diverted 1,500 cubic yards of leaves and yard trim-

policy and incentive options overview, continued

mings from disposal. An additional 25 sites are being targeted in 1996. The city also is conducting a pilot project to promote food waste composting to businesses and to research the existing technologies for food waste composting.

- **The City and County of Denver, Colorado** established the Denver Recycles Master Composter Training and Outreach Program, where individuals are trained in the science of backyard composting and in turn provide 750 hours of public education to Denver homeowners. Complimenting this effort, more than 3,600 compost bins have been sold to Denver residents at reduced costs.
- **Christian County, Illinois** works with local residents to promote vermicomposting in the county's schools, developing promotional materials, making presentations, and constructing observation chambers for the students.
- **New Hanover County, North Carolina** is constructing backyard composting bins from wood pallets. In 1995, the county's distribution of more than 300 bins resulted in the reuse of over 1,500 pallets. The county also offers backyard composting education in schools and has developed backyard composting demonstration sites for county residents.
- **The Durham County, North Carolina** Cooperative Extension Service uses a chipper/shredder to assist residents with their backyard composting efforts. Master Composters use the equipment to help community members chip larger brush items that require long compost times and to shred leaves for faster composting.
- **Knox County, Tennessee** has designed a mobile composting demonstration trailer which features different types of composting units as well as information on the benefits of backyard composting. The trailer is used at neighborhood events, home and garden shows, the farmer's market, schools and other locations or events.

City of Glendale, California

Population: 193,450

Type: Urban.

Contact: Tom Brady, Senior Integrated Waste Planner, Glendale Integrated Waste Management, 548 West Chevy Chase Drive, Glendale, CA 91204, (p) 818/548-3916; (f) 818/507-6128.

Goal/Impetus:

To comply with a mandatory state and local government goal to achieve 50% waste reduction by 2000, the City of Glendale Integrated Waste Management Section initiated a two-pronged approach involving backyard composting education programs and services for residents — with a goal of achieving a 33% participation rate — and a Comprehensive Green Waste Prevention program targeting the managers of commercial and public green spaces, and yard and landscaping professionals. The target audience was 24,000 single family homes, 8,500 2-4 unit dwellings, and 25 of the largest landscaped areas (colleges, parks, golf courses).

Strategy:

The city provides residents with both the knowledge and means to begin composting at home by offering free compost bins and pitchforks to all interested individuals who attend training workshops. In addition, grasscycling also is stressed as a beneficial strategy for managing grass clippings, both on residential lots and in larger parkland areas. Rebates are provided for mulching mowers (\$25) and chipper/shredders (\$50). Newspaper inserts and direct mailings to city residents and businesses promoted the workshops and bin giveaways.

The Comprehensive Green Waste Prevention program began with audits of larger properties, the development and implementation of prevention plans, and the establishment of training programs for landscape managers and yard professionals. Program elements include composting, grasscycling and other landscape material management strategies, such as mulching.

Resources:

Used

The City of Glendale Integrated Waste Management Section is the lead agency on the \$90,000 two-year Green Waste Prevention project, providing one staff position to develop the programs for Glendale, in addition to providing support for six other partner agencies, which included Los Angeles County and the neighboring cities of Pasadena, South Pasadena, Sierra Madre, San Marino and La Canada Flintridge. The annual cost of the program is in excess of \$33,500, with \$27,000 spent on purchasing compost bins and pitchforks. Workshops for residents, garden clubs, etc. are conducted by the program manager who also uses the state of Connecticut's video, *Turning Your Spoils to Soils*.

Available

The California Integrated Waste Management Board provides grants and educational programs encouraging source reduction and backyard composting, including a how-to videotape on composting designed for residents and local communities. Educational materials on yard trimmings, food scrap composting, and grasscycling also are available.

Outcomes:

Evaluation

Although the Green Waste Prevention program only began in July 1995, the backyard composting program began in 1991. The City of Glendale has used compost bin surveys of quantities generated and composted to provide a cost analysis. Even with a separate green waste collection system, the net cost per diverted ton for the compost program is \$7.70, lower than any other diversion program available. The city is a municipal waste collector; whenever a ton of waste is reduced, the city's costs are reduced. Seasonal variation and the newness of the program make actual tonnage decreases difficult to measure, although the trend from 1993-95 indicates an 8% reduction. Almost 500 new homes receive training and compost bins/pitchforks each year; the average household composts .43 tons of yard trimmings and kitchen scraps

case study 1

.....
at-home composting
and grasscycling
programs

▼
The city used a
clear, direct
promotional
message to the
public, and
provided the
tools to enable
them to begin
source
reduction
immediately.

City of Glendale, California, continued

annually. Approximately 10% of households now use program-supplied compost bins.

Barriers Encountered

Neither the city nor the state have a yard trimmings disposal ban and landfill costs are relatively low, as are processing costs for yard trimmings (14,715 tons collected in 1995), which are simply chipped for use as an alternative landfill cover.

Program Strengths

The city used a clear, direct promotional message to

the public, and provided tools (bins, etc.) to workshop participants which enabled them to begin source reduction immediately.

Lessons Learned

Source reduction is the most cost-effective option available to solid waste managers. They should pay special attention to the value of home composting and grasscycling to meet diversion or recycling objectives and should be ready to give away or significantly subsidize the cost of compost bins to increase participation.

case study 2

at-home composting
and grasscycling
programs

More than
3,000 compost
bins have been
distributed to
date, composting
an average of
840 lbs. of
organic material
annually.

Southern Idaho Solid Waste, Burley, Idaho

Population: 210,000

Type: Rural.

Contact: Terry Schultz, Executive Director,
Southern Idaho Solid Waste, P.O. Box 159,
Burley, ID 83318, (p) 208/432-9082;
(f) 208/432-6915.

Goal/Impetus:

Subtitle D regulations have significantly increased solid waste management costs in the rural west due to the expense of required long haul transportation systems. Southern Idaho Solid Waste (SISW) provides rural residents with an opportunity to source reduce an appreciable amount of yard trimmings.

Strategy:

Southern Idaho Solid Waste aims to promote individual responsibility for waste generation through an information campaign coupled with a compost bin distribution program. Bins are sold to residents for \$15 at the conclusion of a workshop conducted by public information specialists and Master Gardener volunteers from the Agricultural Extension Service. The campaign is promoted through paid newspaper ads, radio

and television public service announcements. Other efforts involve including information with utility bills, and coverage in newsletters of municipalities, Soil Conservation Districts, and other public and non-profit organizations. Follow-up information from the University of Idaho and bin use surveys are mailed to participants each year to encourage continued and correct bin use. Eleven workshops are conducted each year in eight counties at community colleges, school auditoriums, and even truck stops.

The program targeted 210,000 residents in nine rural counties: Blain, Cassia, Gooding, Jerome, Lincoln, Minidoka, Caribou, Power, and Twin Falls; this area also contains 22 municipalities.

Resources:**Used**

The program is managed by five staff members on a part-time basis (two staffers at 20 hours/year; three at 140 hours/year). The budget for the program includes \$17,000 net for compost bin procurement (\$32,000 total with \$15,000 recovered through bin sales); \$10,000 for public education and promotion, and \$13,000 for staff time. Grant resources to support the campaign were made available by rural utilities and counties. Earth Machine, the compost bin supplier, makes promotional materials available and other fact-

sheets and materials are available from the University of Idaho. In addition, partnerships were forged with the University of Idaho Agricultural Extension Service and the U.S. Soil Conservation District to provide educational and programmatic support.

Available

For copies of the literature used, contact the University of Idaho Agricultural Service and Earth Machine distributors. Copies of the 30-second television PSAs also are available.

Outcomes:

Evaluation

1,000 bins are sold each year — 3,000 to date. Follow-up surveys were sent to program participants with a 44% response rate. Approximately 94% of residents indicated they continued to use their compost bin after one year, and on average, bins compost 840 pounds of organic material annually. Diversion amounts are lower in this region due to the nature of high plains vegetation (e.g., small amount of leaves, etc.).

Barriers Encountered

Budget and space limitations prevented some residents

from picking up compost bins and attending training classes. Also, after three years of bin sales in five counties, it appears that there is approximately 40% less interest in the program, perhaps indicating market saturation. Additional promotional angles might be necessary to sustain and increase interest in the program.

Program Strengths

The use of a multimedia campaign developed a strong demand for workshops and compost bins. Using the professional knowledge and experience of the Agricultural Extension Service provided reliable information which did not need to be recreated by SISW.

Lessons Learned

Advertise bin distribution programs two weeks before a workshop event to give residents time to fit training into their schedule. Prepare for overwhelming participation; popularity of such a program can exceed expectations. Be sure to have adequate staffing on hand to facilitate distribution of bins. Accurately record the names and addresses of participants for follow-up surveys. Of special note, SISW found it cost effective to only distribute bins at a limited number of workshops; having staff handle sales one at a time over the course of the year was extremely time consuming and costly.

case study 3

.....
 at-home composting
 and grasscycling
 programs

▼
 To change
 public behavior
 you must
 understand why
 residents and
 businesses
 behave as they
 do, determine a
 strategy to
 establish a new
 behavior pat-
 tern and throw
 everything you
 have at that
 strategy.

58

Montgomery County, Maryland

Population: 810,000

Type: 65% Urban; 30% Suburban; 5% Rural.

Contact: Joseph M. Keyser, Environmental Specialist, Department of Environmental Protection, 101 Monroe Street, Suite 607, Rockville, MD 20815, (p) 301/217-2361; (f) 301/217-6935.

Goal/Impetus:

Montgomery County's Ten-Year Integrated Solid Waste Plan requires that solid waste be reduced or recycled by 50% by the year 2000. The county initiated a yard trimmings disposal ban in 1994 to divert yard trimmings - which constitute 18% of the wastestream - from disposal. The county provides weekly curbside collection with material processed at the county's compost facility. The facility can handle up to 60,000 tons; however, in the absence of a source reduction program, an estimated 103,000 tons would enter the recycling stream. An aggressive source reduction program featuring grasscycling, home composting, and mulching was required to keep tonnages within a manageable range and to avoid a \$2.5 million expansion of facilities.

Strategy:

The defining elements of the county program are research, planning, investment, innovative education and outreach tools, and service delivery. Before implementing the program, the county conducted a 60 question baseline telephone survey among 1,124 adult household heads to determine attitudes and habits regarding the management of yard trimmings. Based on survey results, the county developed a public relations and education campaign. The effort focused on grasscycling in year one and composting in year two to reduce the production of grass clippings, and absorb yard trimmings in the form of grass, leaf or wood mulch. The project also provided public education on mulching and landscape alteration.

The county targeted 180,000 single family homes/townhomes, over 250 landscape and lawn service companies, and over 30,000 multi-family and commercial property managers. The program also targeted environmental/conservation groups,

homeowner associations, garden clubs, as well as the staff and volunteers at nature centers, botanic and public gardens, garden centers and nurseries. The program produced direct mail campaigns, special publications, press releases, and radio PSAs in large print and multi-lingual versions. Workshops provided sign-language interpretation where requested. The county conducted follow-up surveys in the Fall of 1994 and 1995 to help fine-tune the campaign message and help establish target audiences.

Resources:

Used

The grasscycling campaign used every media and outreach tool available, including video production; paid and unpaid television and radio PSAs, print/television/radio interviews; press conferences/media events; newspaper inserts; movie theater ads; paid print advertising; six varied-format direct mail campaigns; extensive transit advertising; volunteer demonstration lawns and demo workshops; cable television gardening programs; press releases and tipsheets; elementary school art contests; over 50 information kiosks; partnerships and displays with retailers; over 100 workshops, lectures, professional training sessions, and presentations at landscaper conferences; special events, fairs (County Fair attracts over 500,000), and festivals; street and retail banners and tri-rama ceiling hangers; national and internationally award-winning posters; bumperstickers; mulching mower, retrofit kit, and mulching blade rebate program; factsheets, brochures, rulers, tabloid publications, doorhangers; and an extensively publicized recycling hotline. The cost for the program in the first year was \$360,000 with one full-time staff member and a team of six individuals providing 10% of their time to the project.

The composting campaign included and used most of the previous tools, in addition to 17 large and small Compost Discovery Gardens; teenage Compost Commandos and 120 Master Composter volunteers; VermiLab (vermicomposting school program) including cafeteria worm composting, grade K-5 compost curriculum, and wormboxes with trained faculty in over 120 classrooms in more than 60 public/private elementary, middle, and high schools, and the Digger Worm cartoon character and 7 foot tall mascot; bi-weekly environmental gardening column; over 200 Home Composting workshops attended by almost

12,000 residents and community leaders; compost bin distribution program (18,000 sold at near-cost; 10% of homes have a bin; 95% still in use after 2 years); compost logo, poster, transit campaign (subway and bus placards), 4-color ad, and 30 second television PSA won 7 regional and national American Advertising Awards; 3 sets of tee-shirts (more than 2,000 sold or awarded). Costs for the second year were \$230,000, with one full-time staff member.

Available

Montgomery County will share information, strategies, and materials whenever feasible with other jurisdictions. The county will provide complete program summaries and sample literature upon request. Poster sets and the grasscycling video are available for \$6 each to cover shipping costs.

Outcomes:

Evaluation

Several tools were used to measure program effectiveness including quarterly waste compositional samplings conducted before, during, and after program implementation. Estimated generation rate (amount which would have entered recycling stream due to disposal ban) was 103,000 tons in 1994; only 52,000 entered stream, which means 51,000 tons were grass-cycled or home composted. In 1995, estimated tonnage was 110,000 — only 57,000 tons entered stream and 53,000 were source reduced.

Resident survey information also measures effectiveness. For example, initial survey data revealed that most residents (68%) believed that leaving clippings behind was unhealthy for the lawn; after one-year, only

22% still held that belief. Moreover, 70% now indicate they grasscycle their clippings most of the time — up from 59% the year before. Also, at the end of 1995, 60% of residents composted yard trimmings — up from 43% in the prior year. Bottom line results for the county include not having to expand the compost facility (saving \$2.5 million) and a dramatically lower investment for source reduction, \$7/ton in 1994 and \$4.38/ton in 1995, than for recycling (net \$18/ton) or disposal (\$35/ton for the landfill; \$70-120/ton for combustion).

Barriers Encountered

Changes in administration, political philosophy, and reorganization of the department eliminated a \$1 per container grass tag program that was announced in 1994 and was to have been implemented in 1995. Loss of the program removed an economic incentive to source reduce clippings.

Program Strengths

Strengths include strong legislative support (i.e., a disposal ban), a willingness to invest in education and the innovative use of mass-marketing techniques, graphic design, and media saturation.

Lessons Learned

Investment in dynamic education and outreach programs can be more valuable and effective than outlay for expanded services. To change public behavior you must understand why residents and businesses behave as they do, determine a strategy to establish a new behavior pattern, and throw everything you have at that strategy. People basically want to do the right thing; they need to know what that is and why it is worthwhile to follow that course.

case study 4

at-home composting
and grasscycling
programs

When working
with schools,
go through
curriculum
committees and
principals to
ensure the
program meets
educational
standards.

Western Lake Superior Sanitary District, Duluth, Minnesota

Population: 80,000

Type: Urban/suburban.

Contact: Doug Manthey, Solid Waste Program Coordinator, Laurie Brown, Solid Waste Program Coordinator, WLSSD, 2626 Courtland Street, Duluth, MN 55806-1894, (p) 218/722-3336 x230; (f) 218/727-7471.

Goal/Impetus:

Because the State of Minnesota has a disposal ban on yard trimmings, the District provides residents with an at-home alternative to keep materials out of the city's centralized composting facility. The District is especially interested in grasscycling and home composting to keep grass clippings away from the site during the summer when they can cause odor problems. They also want to introduce vermicomposting to several schools, including an environmental magnet school (with its own zero discharge goals), in addition to teachers, garden clubs and the general public to provide an alternative to the disposal of kitchen scraps.

Strategy:

The District began an aggressive information campaign to residents detailing both the ease of backyard composting and the cost savings to themselves and to the District. Target audiences included residents, businesses, and school children. Important components of the program included partnerships with the Duluth Community Garden Program, garden stores, and the local vo-tech program, which provided several types of compost bins for giveaway campaigns. In addition, District staff worked with the schools to develop a K-6 waste education curriculum, which has become part of the science requirement for Duluth schools.

Resources:

Used

The District carefully selected electronic media for paid advertising campaigns, including radio promotions for bin giveaways at the composting site, and a television commercial on composting. A waste reduction video, *Think Before You Throw*, was developed for schools and community groups, and features backyard composting as a method for handling yard

trimmings. The district conducted community education classes for both backyard and vermicomposting (worm composting) with special cooperation from the Community Garden Program, and developed an education area at the composting site featuring different types of bins and directions for their construction. Newspaper ads also were developed, and a public television gardening program featured composting information. The district promoted vermicomposting through a brochure, 20 free worm box systems for participating schools, and 300 gallon capacity bins for cafeteria scraps at the magnet school. The budget for the campaign was approximately \$15,000; staffing for home composting required 50% of one staff position's time; vermicomposting represented 10% of a position.

Available

Rot is Hot composting booklet is available.

Outcomes:

Evaluation

The District measures effectiveness by requests for the *Rot is Hot* booklet and attendance at community education classes. Worm composting effectiveness is determined by the success of the program among teachers and children, including meeting goals for worm box set-ups, the completion of the large scale project in the environmental magnet program, and the availability of funding and technical support.

Barriers Encountered

The District found that the affluent (east side) of the city was less involved with the program based on attendance and other factors, possibly reflecting that an economic-driven message is not as effective among all population groups.

Program Strengths

The state provides an incentive of a 3% credit toward the District's recycling goal for implementing the program. Partnerships and cooperation are key to success.

Lessons Learned

Try to use channels of communication that are already in place - avoid having to create your own. When working with schools, go through curriculum committees and principals to ensure the program meets educational standards.

chart of local government source reduction and reuse programs

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, Including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number
CA	Alameda County Waste Mgt. Authority & Recycling Bd.	backyard composting	network through events, mailings, demo projects, seminars and workshops, R&D	technical assistance, seminars and workshops		reuse/repair/source reduction grants program	3 FTE >\$30,000	Tom Padia 510/614-1699
	Alameda County Govt.		education programs	education programs	salvage/exchange programs	in-house source reduction purchasing practices	.2 FTE	Beth Eckl 510/208-9629
	Berkeley	backyard composting, bins offered at discounted rates	educational materials	technical assistance	reuse guide, coordinates with local business for salvage operation	all proposals/reports submitted by contractors must be two-sided and on recycled paper		Tonya Levy Deborah Kausman 510/644-8891
	Calaveras County				partnership with Salvation Army to reuse household items			Jim Heiminger 209/754-6403
	Glendale	Green Waste Prevention Program	education programs	education programs			1 FTE >\$30,000	Tom Brady 818/548-3916
	Los Angeles		education workshops, how-to guides, tech. assistance	packaging workshops, tech. assistance	LA Shares program, 2nd Chance reuse workshops		6 FTE	Lupe Vela 213/237-1444
	Sacramento County	backyard composting, demo sites	newsletter and other educational materials	waste audits			1.5 FTE >\$30,000	Daniel Regan 916/366-4287
	San Diego		educational materials, hotline service to residents/schools	tech. assistance			.5 FTE \$15-30,000	Richard Hays 619/492-5010
	San Francisco	backyard composting	extensive Smart Shopping campaign, direct mail, telemarketing, ads, press releases, PSAs	education and outreach, direct mail, ads, press releases, PSAs			8 FTE >\$30,000	David Assmann 415/554-3400
	San Jose	backyard composting	Shop Smart program, Waste Prevention Kits, educational materials	waste assessments, educational materials		"buy-recycled" policy	3.5 FTE >\$30,000	Ellen Ryan 408/277-5533
	Sonoma County					"Recycletown," a "wild west" style retail operation for reusable items		Pavitra Crimmel 707/869-3427
	Stanislaus County	backyard and school composting, educational materials						Michele Sackman 209/525-4160
Trinity County	backyard composting, demo sites, composting videos	education & outreach	education & outreach		subsidies to non-profits to implement reuse	1 FTE \$0-5,000	Tara Gauthier 916/623-1326	
CO	Boulder	backyard composting	education & outreach	education & outreach		work with Boulder Energy Conservation Center		
	Denver	backyard composting, demo site, education materials					1 FTE >\$30,000	Denamarie Schmitt 303/640-1675
	Mesa County		education & outreach	training programs		HHW collection day	75 FTE \$15-30,000	Steve DeFeylei 970/248-6947
FL	Brevard County	backyard composting	workshops, materials, hotline for residents	education & outreach			2 FTE >\$30,000	Nancy Mellor 407/633-2043

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, Including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number
FL (cont.)	Clay County	backyard composting	education & outreach, using broadcast and non-broadcast media	education & outreach	education & outreach	tires sold to recappers, ongoing data collection	2 FTE >\$30,000	Greg Pitts 904/284-6374
	Escambia County			waste audits and reduction strategies for select businesses			3.5 FTE >\$30,000	Doyle Butler 904/968-6628
	Gainesville	backyard composting	unit-based pricing, public education	waste audits, technical assistance targeted at business and institutions			.5 FTE >\$30,000	Gina Hawkins 352/334-5000 X5485
	Franklin County	backyard composting, distribution of free bins					1 FTE \$0-5,000	Van Johnson 904/670-8167
	Hillsborough County	backyard composting, Master Composter training program	education & outreach, enviroshopping, videos, after school programs	education & outreach			2.5 FTE >\$30,000	Mary Chernesky 813/744-5519
	Monroe County	backyard composting	education & outreach, target residents and institutions	education & outreach, target small restaurants			4 FTE \$10-15,000	Connie Grabois 305/292-4433
	Martin County	backyard composting, community education newsletter	education & outreach	education & outreach, news releases and direct contacts			1 FTE \$10-15,000	Hank Woollard 407/221-1386
	Okeechobee County	backyard composting					1 FTE >\$30,000	Mark Baggeto 941/763-1811
	Palm Beach County	backyard composting	reducing unwanted direct mail, enviroshopping programs, special events					Jana Haskins 407/640-4000 X4312
	Pasco County	backyard composting, presentations, information booklets					1 FTE \$5-10,000	Christine Bradley 813/847-8041
	Sarasota County	backyard composting, training program	education & outreach, grocery tours	education & outreach, workshops			.75 FTE \$15-30,000	Jodi John 941/364-4663
	Pinellas County	backyard composting, "Don't Bag It" program for grass clippings	ecoshopping tours, presentations, radio & tv ads, junk mail cards	business awards, education & outreach			.75 FTE \$5-10,000	Rebecca Stone 813/464-7565
Volusia County	5 compost/xeriscape education gardens, Xmas tree mulching program				swap shop for county offices and schools	.3 FTE \$0-5,000	Margaret Hodge 904/947-2952	
HI	Honolulu	backyard composting, demonstration areas, training					5 FTE \$5-10,000	Frank Doyle 808/527-5358
	Kauai		education & outreach	Green Star program, environmental education for community	resource exchange		1 FTE >\$30,000	

appendix i / local gov't programs

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, Including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number
ID	Southern Idaho Solid Waste	backyard composting, 6 rural county cooperative, multi-media outreach approach				wood waste, C&D debris, scrap metal, and waste tire diversion	.66 FTE >\$30,000	Carrie Stauffer 208/726-6861
IA	Des Moines, Metro Waste Authority		education & outreach, various public education initiatives	site visits, tech assistance, outreach			4 FTE >\$30,000	Mathew Niedwender 515/244-0021
	IA Waste Reduction Center, Cedar Falls			on-site visits and active assistance to business, presentations			9 FTE >\$30,000	John Konefes 319/273-2079
IL	Monoma County		public education, presentations, news articles		resource exchange		3 FTE >\$30,000	Harold Johnston 712/353-6300
	Bloomington				non-hazardous materials exchange, bi-monthly listings		.5 FTE \$0-5,000	
	Chicago	backyard composting, free bin give away, workshops, radio campaign					.3 FTE \$5-10,000	Brian Loll 312/744-5917
	Christian County	vermicomposting, targeted at schools					.3 FTE \$5-10,000	Lynda Solliday 217/287-2334
	Downers Grove	backyard composting	unit-based pricing program, public education				.2 FTE >\$30,000	Ellen Dean 708/719-4893
	Grundy County				recover polystyrene for reuse by businesses		.06 FTE \$0-5,000	Jean Ann Robinson 815/941-3214
	McClellan County				materials exchange, bi-monthly listings		.5 FTE \$5-10,000	Mark Dravillas 309/888-5081
	Northern Cook County (SWANCC)					school waste reduction, \$200 grants, press releases, newsletters	.45 FTE \$5-10,000	Ann Tennes 847/296-9205
MA	Worcester	backyard composting	unit-based pricing; education & outreach using bumper stickers, radio ads, and other strategies					Bob Fiore 508/799-1430
MD	Montgomery County	backyard composting, extensive outreach and education campaign	education & outreach	education & outreach	resource exchange		3 FTE >\$30,000	Joe Keyser 301/217-2361
MI	East Lansing	backyard composting, bins to residents at no cost	education & outreach; waste reduction materials for children		"Project Pride" program: community reuse initiative			Tracy Purrenhage 517/337-3943
MN	Kalamazoo County	backyard composting	education & outreach	education & outreach		Internal Waste Reduction Committee for county facilities	1.5 FTE \$0-5,000	Mary Powers 616/384-8111
	Bloomington	backyard composting	education & outreach	education & outreach for residents, presentations		Resource Excellence program, in-house source reduction efforts	1 FTE >\$30,000	Jean Buckley 612/948-8751

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number
MN (cont.)	Minneapolis	backyard composting, flyers, newsletters					2 FTE >\$30,000	Janet Myles 612/673-2789
	Plymouth					in-house procurement policy and action plan	4 FTE \$0-5,000	Kris Hageman 612/509-5506
	Ramsey County	backyard composting	education & outreach, print & radio ads	education & outreach, business waste assistance program		HHW program	1 FTE >\$30,000	Zack Hansen 612/773-4444
	Saint Paul	backyard composting	education & outreach, newsletters, community displays	education & outreach, one-on-one assistance			1 FTE >\$30,000	Mary Tkach 612/644-7678
	SEMREX (Rochester)				materials exchange, municipal & industrial materials		1 FTE \$5-10,000	Susan Waughtal 507/252-0750
	Western Lake Superior District	backyard composting, worm composting				bike reuse program, materials exchange program		Doug Manthey Laurie Brown 218/722-3336
MS	Meridian	backyard composting	education & outreach				2 FTE >\$30,000	Odell Hopkins 601/485-1864
NJ	Burlington County	backyard composting	enviroshopping workshops, public education through newsletters and ads		reuse programs		.5 FTE	Joyce Goldsmyth 609/499-5210
	Cumberland County		education & outreach	education & outreach, seminars			2 FTE \$10-15,000	Denris DeMatte, Jr. 609/825-3700
	Clifton	backyard composting			reusable mug program, extensive public education campaign		.5 FTE \$0-5,000	Alfred DuBois, Jr. 201/470-2239
	Monmouth County	backyard composting, workshops, demo site, compost bin sales					1 FTE \$0-5,000	Virginia Lamb 908/431-7460
	Passaic County	backyard composting	education & outreach w/ evaluation component	education & outreach w/ evaluation component		toxic alternatives program	1 FTE \$10-15,000	Ellie Arnold 201/305-5738
NY	Allegany County	backyard composting, workshops					.2 FTE \$0-5,000	Gretchen Gary 716/268-9230
	Broome County		education & outreach	peer match program				Susan Thompson 607/778-2932
	Cattaraugus County	backyard composting, promotional materials	unit-based pricing				.25 FTE \$0-5,000	Richard Preston 716/938-9121
	Dutchess County		community workshops	target small business, institutions, municipal offices, waste audits, peer match programs			1 FTE \$15-30,000	Mark Wheeler 914/677-8223 X112
	East Hampton	backyard composting, education program, demo sites	education & outreach, video, promotional materials		resource exchange for residents		.2 \$5-10,000	Peter Garnham 516/329-6679

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, Including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number	
NY (cont.)	GLOW Region SWM	backyard composting	public education, information dissemination	technical assistance			1 FTE \$15-30,000	Edwin Marr 716/344-4035	
	Hempstead	backyard composting, xeriscaping, mulching, newsletter					4 FTE \$0-5,000	Lois Beedenbender 516/378-4210	
	New York City	backyard composting, workshops, brochures & other materials	education & outreach	technical assistance, workshops, cooperatives	reusable materials matchmaking program	post office workshop series, Mayoral Directive on Waste Prevention, two-way envelope project	2 FTE 1 intern	David Kleckner 212/837-8175	
	Onondaga County	backyard composting, multi-year education campaign	education & outreach, packaging reduction				.3 FTE >\$30,000	Suzanne LaLonde 315/453-2866	
	Oyster Bay	"Don't Bag It" campaign, compost wheels	pilot programs, public education, reusable bags at supermarkets			HHW drop off center, paint reuse project	2 FTE >\$30,000	Richard Lenz 516/677-5711	
	Southampton	backyard composting	unit-based pricing, public education, school programs				1 FTE >\$30,000	Judy Baker 516/283-5210	
	Tompkins County	backyard composting, education programs	"trash tag" program, public education campaign	education & outreach	potential for hazardous material exchange program		1.25 FTE \$5-10,000	Solid Waste Div. 607/273-6632	
	Woodstock	backyard composting, demo site, educational materials	education & outreach through media	education & outreach, workshops			.15 FTE \$5-10,000	William Reich 914/679-8597	
	NC	Chatham County	backyard composting, demo sites	public education programs	waste reduction business partnership program	Swap Shops for reuse of household items		.5 FTE >\$30,000	Lynn Weller 919/542-8200
		Mecklenburg County	backyard composting	education & outreach, workshops, "how-to" materials	technical assistance, Source Reduction Kit			4 FTE >\$30,000	Brenda Barger 704/336-4279
New Hanover County		backyard composting using wooden shipping pallets, free bins and information			construction material salvage program		.1 FTE \$5-10,000	Geoffrey Little 910/341-4340	
Albemarle Regional SWM Authority			education & outreach, target school children and general public		paint swap program	HHW education program, in-house programs	1 FTE \$10-15,000	Jerry Parks, Anne Blindt 919/297-3300	
Pitt County						peer match program		Hyman Ebron 919/830-4527	
Transylvania County			unit-based pricing		resource exchange program		1.5 FTE \$15-30,000	Will Sagar 704/884-6830	
OH		Cincinnati					in-house 3% price preference for environmentally preferred products or services		
	Solid Waste Authority of Central Ohio				"re:ART," a reuse program for businesses; provides materials to arts community			Solid Waste Official 614/228-9400	

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, Including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number
OK	Tulsa	backyard composting, mulching program	public education		paint give away, Xmas trees for fish habitat		2.25 FTE >\$30,000	Catherine Moody 918/596-9863
OR	Lane County		public education, smart shopping campaign in grocery stores	waste audits and technical assistance		packaging reduction campaign in county facilities	5 FTE \$15-30,000	Hillary Johnson 541/687-4339
	Portland	backyard composting, media outreach	public education					Susan Keil 503/823-7763
PA	Philadelphia		public education, pilot programs	education & outreach			.1 FTE >\$30,000	Ron Bennet 215/686-5449
SC	Columbia		public education, source reduction and recycling				2 FTE >\$30,000	Robert Anderson 803/733-8456
TN	Knox County	backyard composting, demo site, workshops for landscapers	education & outreach	waste audits, technical assistance, round-table events	connection to local, state and national waste exchanges			Athena Lee Bradley 423/215-2300
TX	Austin			technical assistance, on-site assessments	materials exchange	information clearinghouse	3 FTE >\$30,000	Robert Fernandez 512/499-2111
	Irving	backyard composting	education & outreach, utility bill inserts, community forums	education & outreach				Keith Livingston 214/721-2346
	Sunmer County	leaf and yard trimmings composting facilities	education & outreach, media outreach	waste audits, technical assistance			1 FTE >\$30,000	Robert Brown 615/452-1114
VA	Arlington County	mulching lawnmower program	education & outreach, public events	education & outreach			.1 FTE \$5-10,000	Preston Read 703/358-6486
VT	Chittenden SW District	backyard composting, workshops, bin sales	education programs, target residents and schools	waste assessments				Nancy Plunkett 802/872-8100
WA	King County	backyard composting, Master Composter program	extensive education & outreach, targeted at residents and schools, unit-based pricing	extensive education programs, technical assistance, waste assessments	IMEX Materials Exchange with bi-monthly catalog	HHW programs, variety of training and promotional materials	5.25 FTE (SR&R) >\$30,000	Tom Watson 206/296-4481
	Snohomish County	backyard composting		target businesses for packaging reduction			.25 FTE >\$30,000	Suellen Mele 206/388-6488
	Tacoma			small business hazardous waste reduction program				Gary Kato 206/593-7713
DC	Metro Washington Council of Governments					seminars on source reduction and reuse	\$0-5,000	Joan Rohlf 202/962-3358
WI	Dane County	composting sites for grass, leaves, brush				landfill bans for yard trimmings, various recyclables, appliances and other materials	1 FTE >\$30,000	John Reindl 608/267-8815
	Dunn County	backyard composting	Green Pages; Model Homes project			in-house source reduction at county facilities	.20 FTE \$15-30,000	Solid Waste Official 715/232-4017

Appendix I: Local Programs

State	Name of Community	Yard Trimmings Reduction Programs	Residential Programs	Business Programs	Salvage/Exchange Programs	Other, Including In-House Initiatives, Policies or Incentives	Number of Staff, Budget	Contact Name, Phone Number
WI (cont.)	Greater Beloit Chamber of Commerce					materials exchange listing & active exchange		Theresa Zapranoff 608/267-1997
	Madison					HHW collection & product exchange		Honora Kraemer 608/267-1997
	Milwaukee		Pollution Free Zones in 10 public schools, students propose and track source reduction improvements					Steve Brackman 414/227-3160
	SE WI Waste Reduction Coalition: Milwaukee, West Allis, Greenfield, Wauwatosa, Kenosha	yard care & composting brochures	consumer outreach, PSAs, brochures, store campaigns, waste reduction week	fax-back sheets, business hotline, ads in trade journals		HHW waste reduction brochure & signs, Be Smart website with fact sheets, interactive Q&A, and more: www.edu/dept/besmart		Karen Fielder 414/896-8300
	University of WI Surplus/Environmental Mgt.					SWAP (Solid Waste Alternatives Project): materials reuse and computer repair		Neil Peters Michaud 608/265-3417
	WI Waste Reduction Coalition		consumer outreach programs, PSAs, brochures, group presentations			HHW brochure with source reduction message	.25 FTE 2.5 LTE in districts >\$30,000	Joel Stone 608/266-2711

appendix ii

source reduction and reuse program questionnaire

National Recycling Coalition

Source Reduction Forum Case Study Template for Local Government Programs

Please complete this template to the greatest extent possible and include additional written information as you see fit. **Please mail or fax the completed template to Chris Benjamin at the National Recycling Coalition** at 1727 King St., Suite 105, Alexandria, VA 22314-2720. Fax # 703-683-9026; Phone # 703-683-9025 X211. Thank you for your time and input.

Name of Community _____

Contact Name _____

Contact Address _____

City/State _____

Phone/FAX _____

E-mail Address _____

Please check here to receive a copy of the final report.

1. Is your community currently implementing any solid waste source reduction or reuse programs? Please specify which type.

- | | |
|--|---|
| <input type="checkbox"/> In-House Source Reduction Program | <input type="checkbox"/> Programs for Businesses |
| <input type="checkbox"/> Policy and Incentive Options | <input type="checkbox"/> Yard Trimmings Reduction |
| <input type="checkbox"/> Education Programs for Residents | <input type="checkbox"/> Other (Please specify) _____ |
| <input type="checkbox"/> Salvage/Exchange Programs | |

2. Please describe your program.

Program Goal(s): _____

Target Audience(s): _____

Overall Strategy: _____

Strategy for Publicizing Program: _____

3. What was the impetus for your community's program?

- | | |
|---|---|
| <input type="checkbox"/> State Incentive | <input type="checkbox"/> Other (please specify) _____ |
| <input type="checkbox"/> Grassroots Initiative | _____ |
| <input type="checkbox"/> Local Govt. Initiative | _____ |

4. Who is the lead agency/manager? Are there any partner agencies or organizations involved?

Lead Agency/Manager: _____

Partner Agencies: _____

5. How many staff are dedicated to the source reduction or reuse program?

Number of staff _____

Estimated % of time spent ___ Full Time ___ Half Time ___ Other (Please specify)

6. What is the program's budget?

- \$ 0 - 5,000 \$ 5,000 - 10,000 \$ 10,000 - 15,000
 \$ 15,000 - 30,000 > \$ 30,000

7. What are your criteria for measuring the program's success? Have you met your program's objectives? What do you think has led to the success of your program?

8. Please identify any lessons you have learned or advice for other communities.

9. Please describe any legislative, regulatory, economic or other barriers that have INHIBITED the success of your source reduction or reuse efforts. (Example: In states that offer financial incentives to municipalities for each ton of material recycled, a community may focus more on collecting junk mail and yard trimmings, rather than encouraging residents to cancel junk mail sent to their homes or to leave grass clippings on the lawn.)

10. Please describe any legislative, regulatory, economic or other incentives that have ENCOURAGED the success of your source reduction or reuse efforts. (Example: In the state of Minnesota, counties receive a 3% credit towards their recycling goal for implementing specified source reduction activities.) Please describe specific benefits that have been achieved, such as a measured reduction in the amount of waste disposed.

11. Are you aware of other communities in your region conducting similar programs?

Name of Community	Type of Program(s)	Contact Name/Phone Number
-------------------	--------------------	---------------------------

- | | | |
|----|-------|-------|
| 1. | _____ | _____ |
| 2. | _____ | _____ |
| 3. | _____ | _____ |





NATIONAL
RECYCLING
COALITION
INC.



1727 King Street, Suite 105

Alexandria, VA 22314-2720

(703) 683-9025 Fax: (703) 683-9026



printed on recycled paper

50% total recycled content, minimum 20% post-consumer content