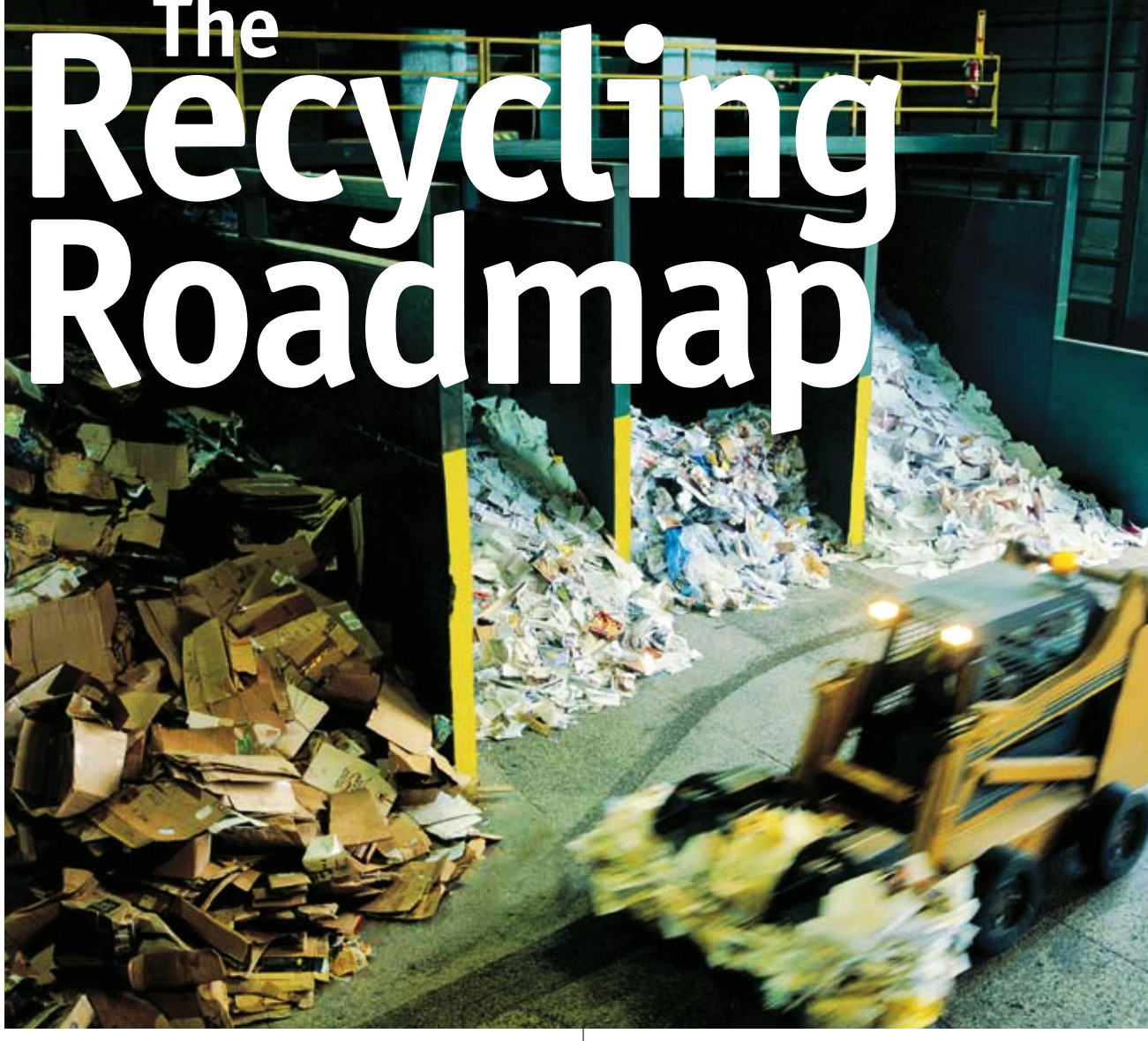
FEATURE

What policies and programs do states need to maximize recycling rates?

The Recycling Roadmap



BY **Robin Mitchell**

Recycling has developed far beyond the days of people simply taking newspapers, bottles and cans to the local drop-off center. Zero waste, once an obscure concept, is now a regular part of the discussions about waste management in an increasing number of jurisdictions. And communities are incorporating sustainability into evaluation criteria when selecting vendors and developing programs.

In 2008, Florida joined the growing number of states seeking to increase landfill diversion when it established a goal of a 75 percent recycling rate by 2020 (the state's rate is currently 28 percent). Legislation enacted this year establishes a Recycling Business Assistance Center, and requires construction and demolition debris to be processed prior to disposal. However, it remains to be seen whether the new law provides the policies and funding necessary for Florida to reach its target.

To identify how a state can be successful in such efforts, Tampa, Fla.-based Kessler Consulting Inc. (KCI) set out to answer this question: What state-level policies and programs are needed to maximize recycling? KCI reviewed numerous state recycling programs and their progress. Special focus was given

to eight states that reportedly have achieved diversion rates of 40 percent or higher: California, Maryland, Massachusetts, Minnesota, North Carolina, Oregon, Washington and Wisconsin.

KCI identified 10 key elements that contributed to the states' success (see Figure 1). All of these elements are not necessary to maximize recycling, but each of the eight high-performing states capitalized on several of these factors.

This article covers the first five key elements, which are policy-related. The remaining five elements will be discussed in a future article.

Goals and Plans

Granted, there are almost as many ways to count recycling rates as there are states, but meaningful goals and long-term strategic plans to achieve them are the foundation of the country's most successful recycling programs.

Some states apply their goals to just municipal solid waste, while some count all solid waste, including industrial and agricultural scrap. Several states (e.g. Maryland, Minnesota and Oregon) allow local governments to calculate source reduction credits toward their rates. A few states (e.g. California) count fines from construction and demolition debris or ground-up yard waste used for alternative daily landfill cover as recycling. Florida took an especially controversial leap — one that has been criticized for being inconsistent with the nationally accepted waste management hierarchy — by counting renewable energy (e.g. waste-to-energy and possibly landfill gas recovery) as recycling.

Merely establishing a goal does not ensure success. It needs to be backed by programs and policies that incentivize action and help establish the necessary infrastructure and markets. States with the most successful recycling programs typically develop state-level strategic plans and also require some form of local government planning. Local government plans should not merely be obligatory reporting exercises, but should be dynamic plans that are reviewed and revised over time to reflect progress and advancements in recycling methods and technologies.

Furthermore, local governments should face consequences for not achieving established goals or maintaining plans. For example, some states have the ability to withhold grant funding to local governments or to condition solid waste facility permits on achieving state goals.

Disposal Bans

Disposal bans are placed primarily on wastes that could potentially release toxic substances into the environment (e.g. batteries, mercury-containing products and electronics) or that are difficult to dispose of (e.g. tires and white goods). Several states have taken disposal bans a step further and use them to support or stimulate markets for recyclable or compostable materials, such as yard waste, paper, metal, glass and plastic containers (see Figure 2).

Enacting a "ban without a plan" should be avoided. Sufficient time between ban passage and its effective date as well as an understanding of the commodity markets are vital to establishing the necessary collection, processing and market infrastructure for the banned materials. In addition, an enforcement mechanism is important to maximize effectiveness of the ban.

Massachusetts and Wisconsin have been at the forefront of using disposal bans as recycling incentive tools. Both states credit these bans with helping to expand private sector investment in recycling infrastructure and increasing diversion rates.

FIGURE 1

THE 10 KEY DRIVERS OF SUCCESSFUL RECYCLING

- Goals and Plans
- Disposal Bans
- Bottle Bills
- Product Stewardship
- Political Champion
- Construction and Demolition Debris Recycling
- Organics Recovery
- Technical Assistance
- Marketing Development
- Funding

FIGURE 2

EXAMPLES OF STATEWIDE DISPOSAL BANS ON COMMON RECYCLABLES

State	Banned Materials
Massachusetts	• Aluminum, metal and glass containers • Single polymer plastics, recyclable paper • Asphalt pavement, brick, concrete, metal and wood
Michigan	• Beverage containers 1 gallon or smaller
Minnesota	• Telephone directories
North Carolina	• Aluminum cans • Beverage containers consumed on premises of ABC permit holders • Plastic bottles, wood pallets
Wisconsin	• Newspaper, corrugated cardboard and other containerboard, magazines, office paper, beverage and food containers (glass, aluminum, plastic #1 and #2, steel and bi-metal), foam polystyrene packing material

NOTE: Commonly banned materials such as yard waste, tires, white goods and batteries are not included.
SOURCE: Kessler Consulting, Inc.

Bottle Bills

The 11 states with bottle bills make up 29 percent of the U.S. population, but, according to the Container Recycling Institute, they recovered 49 percent of the beverage containers recycled nationwide in 2006. In those 11 states, more than 60 percent of used beverage containers were recycled —compared with only 24 percent in non-bottle bill states (see Figure 3).

Several states have expanded their bottle bills to include non-carbonated beverages such as bottled water; however, it remains an uphill battle to enact a new bill. Only one state, Hawaii, has enacted a new bottle law in the past two decades. In addition, Delaware has repealed its bottle bill effective December 2010, with refunds ending in February of next year.

Questions typically arise regarding the compatibility of a bottle bill and curbside recycling, and the pros and cons of each. Most state bottle bills pre-date the widespread advent of curbside recycling programs; however, extensive and complementary curbside recycling programs have developed in bottle bill states. Curbside recycling targets all types of containers, not just beverage containers. Bottle bill systems are funded by producers, retailers and consumers rather than taxpayers. An added advantage of bottle bills is the funding they provide to states from unredeemed deposits.

FIGURE 3

BEVERAGE CONTAINER RECYCLING RATE, 2006

	Aluminum Cans	PET Bottles	Glass Bottles	Total
11 Bottle Bill States	75.8%	44.4%	63.6%	61.4%
39 Non-Bottle Bill States	35.1%	13.6%	12.4%	24.2%
U.S. Total	45.2%	23.5%	27.8%	34.7%

SOURCE: Container Recycling Institute

Product Stewardship

Product stewardship, also known as Extended Producer Responsibility (EPR), is considered by some to be the most promising approach to developing markets for recovered materials. EPR requires manufacturers to invest in the infrastructure to recover and process their products and/or packaging, thereby relieving local governments of the primary financial responsibility for managing end-of-life products.

Product stewardship has been slow to take hold in this country, with most EPR laws focusing on products that contain toxic materials or are hard for the waste management system to handle when they reach the end of their lives. For example, at least 20 states have enacted such laws for electronics.

Earlier this year, Maine became the first state to pass what is known as "product stewardship framework" legislation, which establishes a process for creating producer responsibility programs. While this is promising, some states, including Florida, are reluctant to take action and are looking to the federal government to take the lead in establishing a national product stewardship policy.

Political Champion

In every state or local government that has excelled at recycling, recycling has had a strong political champion. Political support is needed to put these policies in place and to provide the resources to implement them. Various special interests — from the private and public sectors — will present their opinions when solid waste legislation is introduced. A true political champion is able and willing to understand the issues and make the tough decisions that are in the best long-term interest of all residents and the environment.

Good for the Environment and the Economy

Why strive to maximize recycling? Because doing so benefits both the environment and the economy.

Recycling provides a range of environmental benefits at every stage of a consumer product's lifecycle, from the mining of raw materials through use and final disposal. For most discarded materials, the lifecycle energy savings derived from recycling are greater than if the material had been combusted for energy recovery.

Recycling also creates jobs and is an engine for economic growth. It outpaces the waste management and disposal industry in job creation, and produces commodities with market value.

This article has covered five important policy tools that have been used by states with recycling rates of 40 percent or higher. Part two of this article will discuss five additional key elements used to incentivize local government and private sector investment and innovation in recycling technology and infrastructure. ■

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FEATURE How do states achieve high diversion rates?

Ramping Up Recycling

BY Robin Mitchell

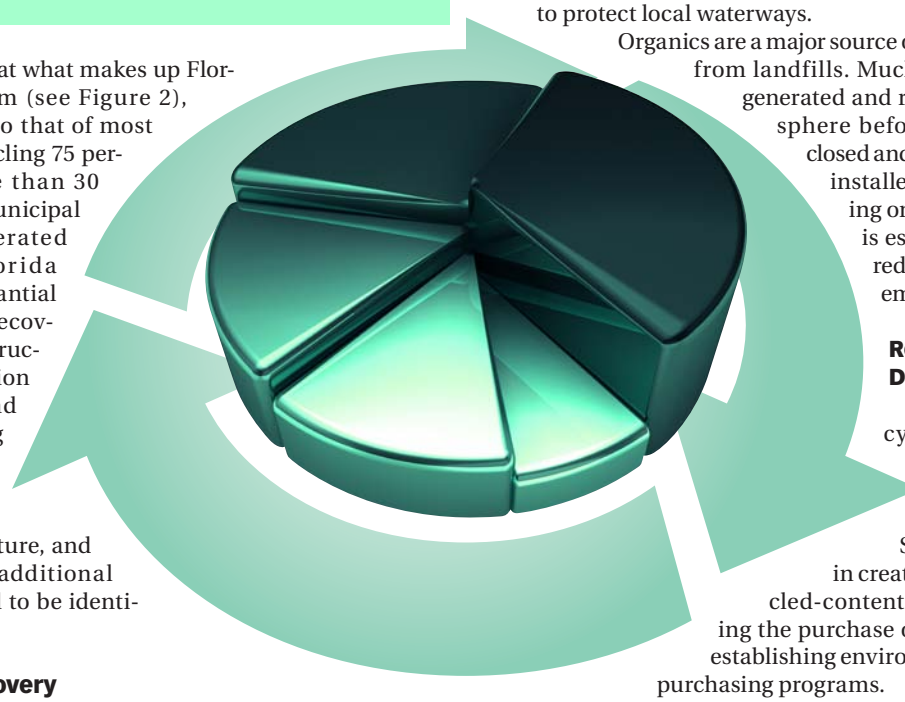
Prompted by Florida's 75 percent recycling goal, Kessler Consulting Inc. (KCI) set out to answer the question: "What set of state-level policies and programs are needed to maximize recycling?"

After researching various "high-performing" states (i.e., those reporting recycling or waste diversion rates of 40 percent or higher), KCI identified 10 key elements that contributed to their success (see Figure 1). Part 1 of this article ("The Recycling Roadmap," Waste Age, October 2010, p. 34) discussed the first five elements, which are policy-related. This article focuses on the remaining five, which are more programmatic in nature.

FIGURE 1

Key Policy and Programmatic Drivers of Successful Recycling

1. Goal and Plans
2. Disposal Bans
3. Bottle Bills
4. Product Stewardship
5. Political Champion
6. Construction & Demolition Recycling
7. Organics Recovery
8. Market Development
9. Technical Assistance
10. Funding



KCI first looked at what makes up Florida's waste stream (see Figure 2), which is similar to that of most other states. Recycling 75 percent of the more than 30 million tons of municipal solid waste generated annually in Florida will require substantial increases in the recovery of paper, construction and demolition debris (C&D), and organics. Funding will be needed to expand the collection and processing infrastructure, and markets for this additional tonnage will need to be identified or developed.

C&D Debris Recovery

Many of the states with high diversion rates have realized the critical role that C&D waste plays in achieving their goals, and have initiated programs to encourage or require its recovery. Mechanisms that help drive C&D recycling generally fall into one of three categories: education/technical assistance, economic incentives or regulations (see Figure 3).

Historically, state and local governments have sought to stimulate voluntary C&D recycling by employing education and market incentives before adopting regulatory controls. Massachusetts is one state that has taken a regulatory approach by banning the disposal of asphalt pavement, brick, concrete, metal and wood. In 2006, the year the bans took effect, Massachusetts reported that 66 percent of its C&D debris was recycled.

Organics Recovery

Substantial recovery rates for organics have been achieved by applying a myriad of policies and programs, and by targeting food waste in addition to yard trash. Examples include:

• Disposal bans. Twenty-three states have some form of yard trash disposal ban, and at least one state (Massachusetts) has considered a ban on food waste.

• Regulations that streamline permitting of composting facilities.

• State Department of Transportation (DOT) programs to use compost and mulch. At least 30 state DOTs have compost or related product specifications for roadside maintenance and erosion control projects.

• Quality standards for finished compost to ensure users they are purchasing high-quality products. Several states have adopted the U.S. Composting Council's Seal of Quality Assurance for compost and mulch.

• Development of on-farm composting.

• Research and demonstration projects, training and grants.

One of the most promising approaches is establishing programs that link water quality and resource protection with soil quality and compost use. For example, Washington established best management practices for stormwater management that requires new construction projects to amend soil with compost to protect local waterways.

Organics are a major source of methane emissions from landfills. Much of this methane is generated and released to the atmosphere before landfill cells are closed and gas recovery systems installed. Therefore, diverting organics from disposal is especially beneficial in reducing greenhouse gas emissions.

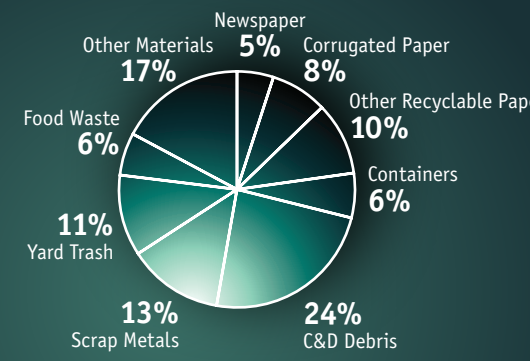
Recycling Market Development

Merely collecting recyclables is of no use unless there are markets to use these materials. States can be a driver in creating demand for recycled-content products by requiring the purchase of such products and establishing environmentally preferable purchasing programs.

FIGURE 2

Composition of MSW in Florida, 2008

(% by weight)



SOURCE: Florida Department of Environmental Protectiioon

FIGURE 3

Tools to Increase C&D Debris Recycling

EDUCATION/ASSISTANCE

- Guides and toolkits
- Model ordinances
- Workshops and websites
- Direct hands-on assistance
- Education by example through government building projects
- Material exchanges or brokering systems

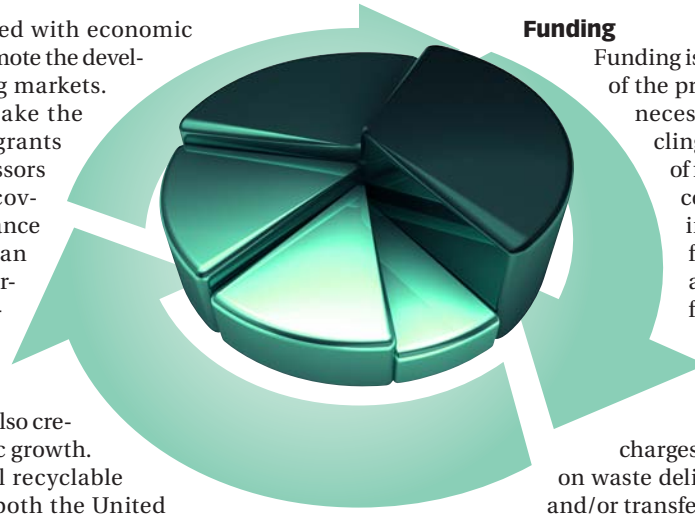
ECONOMIC INCENTIVES

- Grants or low-interest loans
- Tax exemptions for equipment
- Reimbursable fees based on project diversion rates
- Differential tip fees
- Disposal tax surcharge
- Voluntary green building programs

REGULATIONS

- Disposal bans
- Mandatory recycling
- Mandatory processing prior to disposal
- Lined C&D landfills
- Mandatory green building standards

Some states have partnered with economic development agencies to promote the development of in-state recycling markets. Economic incentives can take the form of low-interest loans, grants or tax exemptions for processors or manufacturers using recovered materials. Other assistance can range from business plan development to expedited permitting to help with sourcing materials. Establishing domestic markets not only provides local outlets for recovered commodities, but also creates jobs and spurs economic growth.



As markets for traditional recyclable commodities expanded in both the United States and overseas, states seeking to attain higher recycling rates have shifted their market development efforts to a new set of priority materials **(see Figure 4)**.

Technical Assistance

Most of the leading recycling states provide practical and ongoing technical assistance to local governments, and help them stay current on advancements in recycling program design and technologies. In the last 10 years, technologies have emerged that improve collection and processing efficiency. In addition, innovative and streamlined program designs can add convenience and create incentives for recycling participation. Some of the key programs being promoted include:

- Pay-As-You-Throw.
- Single-stream recycling.
- Commercial recycling mandates and incentives.
- Food waste recovery.
- Mixed waste processing.

FIGURE 4

Common Market Development Priorities

TOP-TIER PRIORITIES

- Organics (food waste in particular)
- C&D debris
- Electronics

SECOND-TIER PRIORITIES

- Carpet
- Plastics (#3-#7 bottles, durables, rigid)
- Tires
- Mixed color glass cullet

Funding

Funding is critical to the development of the programs and infrastructure necessary to achieve high recycling rates. States use a variety of funding sources, but share a common challenge of ensuring that the funds are used for their intended purpose and not raided to make up for other budgetary shortfalls. The most common funding mechanisms are:

- Disposal fees and surcharges. At least 30 states levy a fee on waste delivered to disposal facilities and/or transfer stations.
- Facility permit fees.
- Unredeemed deposits from bottle bills.
- Advance recovery fees.
- Special fees and taxes.
- Product stewardship fees.
- Appropriations from state general funds.

Shifting from "Waste Management" to "Resource Management"

Achieving a recycling rate of 75 percent requires a fundamental shift from a philosophy of "waste management" to "resource management". It requires increased public and private sector investment in the recovery and processing infrastructure, an expansion of markets, and influencing product and packaging design to enhance the recyclability of more materials.

Maximizing recycling is not a journey for the faint-hearted, and there is no one-size-fits-all approach. To get there, you must have a plan, target the largest waste categories (e.g. paper, C&D and organics) and ensure that markets exist to absorb those commodities. The chosen route may vary but you will need a political champion to pave the way and the resources to see you through to your destination. You need to be equipped with the right set of tools and have an experienced guide committed to reaching the desired goal. ■

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