Planning

SECTION 3

Like any other integrated waste management program, a recycling measurement system must be carefully planned, designed, and implemented. The first step in this process is to define program goals and plan the basic elements of the system, including staff and resources needed. The steps described in this section will help you conduct the initial planning that is critical to the success of your overall recycling measurement system.

Step One

Define Your Program Goals.

State and local governments measure recycling for a number of reasons. One of the key reasons to collect recycling and waste generation data is to assist with planning and decision-making. Such data can help solid waste managers:

- Set waste reduction or diversion goals and track progress toward achieving those goals.
- Identify trends in waste generation and recycling that could impact local, state, or regional planning.
- Make decisions or changes in collection crews, route schedules, and equipment needed for waste pickups and recycling collection.
- Assess and choose among waste management options based on the amount and type of waste and recyclable materials.
- Determine the viability and capacity of existing solid waste recycling and disposal facilities, including transfer stations and material recovery facilities (MRFs).

Measurement can also assist with market development by providing a clear understanding of the supply and demand of different recyclable materials in a given area. Specific information on the type and amount of recyclables being generated within a jurisdiction might be useful in a variety of ways, such as:

- Linking buyers and sellers of a particular material.
- Identifying the need for added processing capacity at the local or regional level.
- Indicating that marketing efforts need to be increased for a particular recyclable material.

Planning Steps

1. Define your program goals.
2. Determine if useful data are already being collected.
3. Ascertain your authority to survey and collect data.
4. Determine who will collect recycling measurement data.
5. Decide on reporting requirements.
6. Establish program staff and budget.
7. Establish a timeframe for system development.

- Attracting an established recycling industry to locate a facility in the area.
- Assisting local entrepreneurs in starting small-scale recycling businesses.
- Encouraging local manufacturers to use or to increase their use of locally generated recycled materials in their products.

Collecting recycling measurement data also can help officials establish or expand community collection programs. Reporting the recycling progress being achieved within a particular state or community can help raise public awareness of recycling, encourage participation in collection efforts, and promote buy recycled campaigns. The data might also suggest a need to expand residential or commercial collection programs, particularly if there are large generators of certain recyclable materials in the area.

TIP

Your reasons for measuring recycling will determine the kind of information you collect. (See Section 4, step 3, for further details.)

Step Two

Determine if Useful Data Are Already Being Collected.

Once you have determined your measurement goals, investigate which departments, agencies, or organizations are already collecting data. Sometimes different agencies collect similar data. Identifying and eliminating such redundancies can streamline your recycling measurement efforts.

For instance, in states with a bottle deposit law, the revenue or tax department might have data on the number of bottles returned for redemption. Similarly, the health department might have data on household hazardous waste collections.

TIP

Compile a list of all other agencies, departments, or organizations that are collecting data related to recycling measurement and consider the possibility of combining efforts.

At one point in **New Hampshire,** four entities were maintaining information needed for recycling measurement—the New Hampshire Resource Recovery Association, the Governor's Recycling Program, the Department of Environmental Services (DES), and the University of New Hampshire. Presently, the Governor's Recycling Program compiles recycling data from municipalities, while the DES compiles disposal data reported by permitted solid waste facilities.

Step Three

Ascertain Your Authority to Survey and Collect Data.

Since compiling data often involves soliciting information from private and public sources, establishing your authority to engage in data collection might be required. First, consult with the appropriate counsel within your agency or examine statutes such as solid waste and recycling laws to determine if special authority is required. If so, work within your department, mayor's or governor's office, or legislative body to gain the authority you need. Also, consider contacting states or localities already engaged in recycling measurement for advice. Appendix E lists the states and their recycling agencies.

In lieu of direct authority to collect data, consider contacting solid waste and recycling facility permitting offices. They might already be

compiling some of the data you need. Local or regional solid waste management plans are also a good source of data. Another possibility is to approach your state or local recycling organization or related trade associations about taking on recycling measurement.

Montgomery County, Maryland, receives data on tonnages recycled and disposed of through haulers, who must submit this information every 6 months as a requirement of their permits.

TIP

If you do not currently have authority to collect the data you need, research the reporting requirements solid waste and recycling facilities already comply with to help you determine what types of data you can access through these means.

Step Four

Determine Who Will Collect Recycling Measurement Data.

There are two basic options for collecting data: 1) go directly to recycling and disposal facilities for the information, or 2) work with the appropriate local government units to compile data and report back. Often, a combination of these approaches is used. While there is no prescribed method for who collects and compiles data, there are definite advantages and disadvantages to the different approaches, which are detailed below and in Table 4.

Direct Surveying

In some areas, the private sector and local government agencies report directly to the principal measuring agency. Since the overall costs of recycling measurement increase when many agencies are engaged in data collection, it is often more cost-efficient for the measuring agency to distribute surveys and compile data directly. This approach has the added advantage of reducing the paperwork burden on recycling and disposal facilities. When the measuring agency surveys data sources directly, this can result in more staff costs, but it also reduces the burden on local government agencies and streamlines the reporting process for the private sector.

Counties in **Maryland** compile recycling data and submit annual reports to the Maryland Department of the Environment. The work accomplished at the county level enables the state to use less than a quarter of a staff person's time per year to distribute surveys to counties and compile data.

TABLE 4. DIRECT VS. INDIRECT SURVEYING

MEASURING AGENCY SURVEYS FOR DATA	LOCAL AGENCIES SURVEY AND REPORT BACK
ADVANTAGES	**DISADVANTAGES**
Overall measurement costs are lower.	Overall measurement costs are higher.
Streamlines reporting process for private sector.	Increases burden on local governments.
Reduces burden on local governments.	Reporting process for private sector is less streamlined.
DISADVANTAGES	**ADVANTAGES**
Measuring agency may incur additional staff costs.	Local agencies are more familiar with waste management infrastructure.

Indirect Surveying

City or county governments can survey data sources and report the data to the principal measuring agency. Local governments often are in the best position to collect data directly since they are more familiar with how waste flows in their area and who the key players are. The disadvantages of this approach are that the overall cost of recycling measurement goes up and data collection may overburden local governments. In addition, survey respondents (recycling and disposal facilities) must deal with many requests for similar information from every jurisdiction they service. This problem, however, can be alleviated somewhat by using standard survey forms and reporting deadlines.

Other Options

In addition to the two approaches discussed above, many other options for data collection exist. For example, the measuring agency can collect some data directly, such as waste disposal facility data, while local governments could survey waste haulers for information on waste exports. Or, the measuring agency can compile those data most easily obtained within their agency, such as information on tire and lead-acid battery recycling (in the case of states), and complete this portion of the survey form for the local governments. The measuring agency also could distribute survey forms to processors on behalf of local governments. In this case, respondents can be asked to fill out a separate form for each jurisdiction they service. This approach is useful when local-level recycling rates are also being sought. Local governments can also collect and analyze data on their own if their state program is new or undeveloped.

TIP

Determine which agencies will collect data based on available resources, timing, streamlining, and your knowledge of the waste management infrastructure.

Step Five

Decide on Reporting Requirements.

The reporting requirements of your recycling measurement program can be voluntary or mandatory. Legislation often dictates what your reporting requirements will be. If you can choose the kind of program to implement, available resources will be a chief consideration, but other issues must be weighed as well (see Table 5 on page 19).

Mandatory reporting is generally less expensive and usually leads to a higher response rate, but can result in less accurate data and fewer opportunities to interact with the recycling community. Voluntary reporting, on the other hand, requires additional staff and resources, but generally provides benefits beyond simple data collection such as chances to build positive relationships with survey respondents.

The decision to adopt a voluntary or mandatory program can also be affected by resource availability. States and localities with mandatory indirect surveying and reporting have the lowest program implementation costs (at the measuring agency level). This approach is beneficial for agencies with minimal resources for recycling measurement. The local governments, however, shoulder high implementation costs because they bear the burden of data collection.

Agencies with voluntary indirect data collection incur relatively high costs because such programs require extensive follow-up. The cost burden to local governments, however, is lower than with mandatory data collection because they can gather whatever data their resources allow. If you institute a voluntary program and contact data sources directly, costs can vary depending on the number of reporting entities. In this approach, local governments bear negligible costs.

Officials in two **New York** counties have adopted different reporting systems but have similar data collection success. **Monroe County,** with a mandatory reporting system, enjoys a high response rate but has only limited time to develop close working relationships with the respondents or monitor the accuracy of the information provided. **Onondaga County,** with a voluntary reporting system, has a business recycling specialist who is able to track businesses with high recycling rates, build relationships with them, and encourage them to report.

TABLE 5. REPORTING OPTIONS AND TYPICAL COST AND RESPONSE IMPLICATIONS

TYPE OF DATA SURVEYING AND COLLECTION	MANDATORY (M) OR VOLUNTARY (V)	COST + = MORE EXPENSIVE − = LESS EXPENSIVE	RESPONSE RATE H = HIGHER L = LOWER
Direct	(M)	– Measuring Agency (MA) – Local Governments (LG)	H
Direct	(V)	+ or - (MA) – (LG)	L
Indirect	(M)	– (MA) + (LG)	H
Indirect	(V)	+ (MA) – (LG)	L

Step Six

Establish Program Staff and Budget.

Recycling measurement takes time and resources. Costs are incurred during startup (planning and design) and implementation (operation).

Startup costs include the cost of setting up the data collection system, such as developing survey forms and determining information sources, public relations and outreach, and staff training. Once up and running, the biggest cost element is staff time to operate and maintain the program. Other costs, such as telephone, postage, printing, and travel costs, are minimal in comparison.

Depending on the size and complexity of your program, expect that at least one person will be dedicated (half to full time) to this effort for at least part of the year.

TIP

If staff resources are a problem, consider making reporting mandatory to reduce the time required for developing and maintaining public and private sector relationships.

Step Seven

Establish a Timeframe for System Development.

While this guide will help you get started, organize your program, and make key decisions, adequate startup time is still needed to obtain input and design a program that works best for you.

It is important to establish a timeline for your program during the planning phase. If you have never measured recycling, allow 1 year to get the program up and running. This time is needed to define responsibilities, do the necessary legwork, and solicit feedback from appropriate sources.

Simply switching to the standard approach will take less time, but you should plan for at least 3 to 6 months to make the necessary adjustments and promote the new program. You may find, for example, that you want to modify your survey forms to collect data on

Oregon convened a workgroup to advise program development in January. To work out the details, the group met every 4 weeks at the start of the project and then every 6 to 8 weeks toward the end of the project. Surveys were ready and distributed in December.

recyclable materials counted in the MSW recycling rate but excluded from your own. On the other hand, if you decide to continue with your existing approach, it could require as little as 1 day to make adjustments and recalculate your recycling rate according to the standard method.

The sample timeline in Table 6 on page 21 illustrates the amount of time needed to complete the planning, design, and implementation phases of a typical recycling measurement system. While the exact steps and allotted times will vary from one jurisdiction to another, the timeline serves as a guide to help you establish a timeframe of your own.

The sample timeline suggests distributing survey forms on January 15 and asking that they be returned by April 15. While not required, adhering to these dates will help to improve the efficiency with which data are collected across the United States. Survey respondents servicing more than one jurisdiction will become accustomed to when they receive survey forms and when they need to return them.

TIP

Allow at least 1 year for planning and designing a new recycling measurement system before sending out survey forms.

TABLE 6. RECYCLING MEASUREMENT TIMELINE