

US EPA ARCHIVE DOCUMENT



## Chapter 3

# Compiling FCA Data

Because of the many different ways that local governments handle solid waste, there is no single recipe appropriate for all jurisdictions. You can adapt the approach described here to fit your own circumstances. As described in Chapter 1, FCA requires information about up-front, operating, and back-end costs of your current system. To compile this information systematically, the following information is helpful:

- **Descriptive information** about your current program, including its history, scope, and future plans.
- **Inventory** of assets such as vehicles, buildings, equipment, and land as well as the human resources employed to manage MSW.
- **Organizational review** identifying supervisory and advisory units to which the solid waste program reports as well as providers of services to the solid waste program.
- **Available financial records and reports.**

As illustrated in Exhibit 3-1, these four sources of information provide all the raw material needed to conduct FCA.

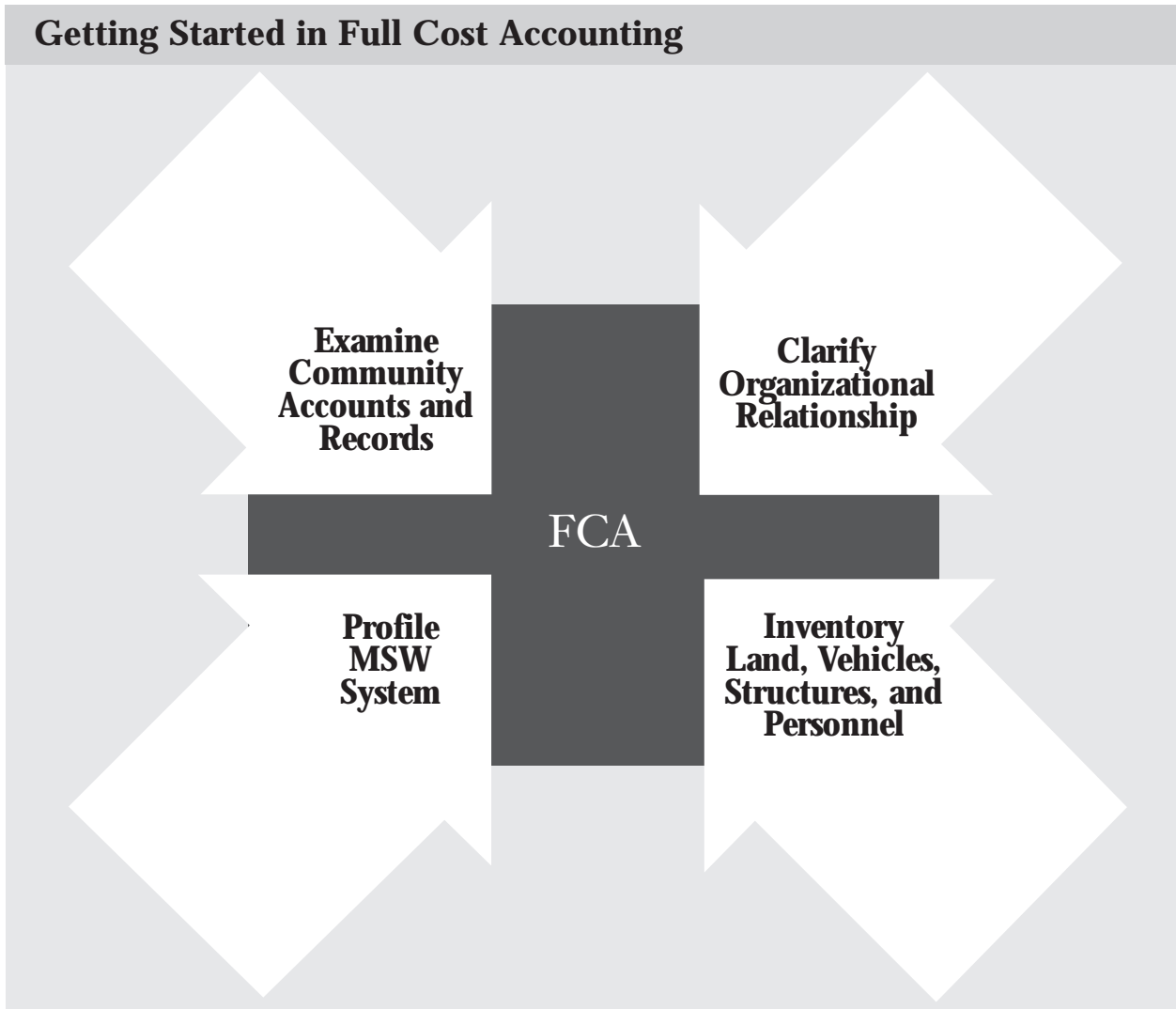
What your solid waste management system costs depends on what it does. To avoid overlooking some costs, your community might want to profile its current MSW program. The program description can answer such important questions as:

- How much waste is involved?
- Who moves it?
- How?
- How often?
- How far does it travel?
- How long does each trip take?

You might want to write down all the steps that solid waste takes from its generation to the point of processing and final disposition. By identifying all of the activities that make up your system, you can now determine their costs. Drawing a schematic diagram or flow chart of your current MSW program, developing a history or chronology of the program, and reviewing your plans

### Program Description

**Exhibit 3-1**



for the future can all help paint a more complete picture of your current MSW management system.

**MSW Flow Chart.** You can use the flow chart shown in Exhibit 2-1 to map the waste flows from collection or drop-off, through transfer stations or processing facilities (MRFs), to ultimate disposal. This flow chart can help you account for all of the major activities involved in moving solid waste. You might want to tailor and annotate the flow chart to reflect your community.

**Program History.** The history or chronology of your solid waste program helps identify up-front costs that already have been incurred as well as current operating costs. The purpose of the chronology is to shed light on your current solid waste system. (See Exhibit 3-2.)

**Future Plans.** Your review of future plans can focus on anticipated dates of closure of currently operating facilities and other anticipated future capital outlays entailed by current operations. This can help identify back-end costs. Plans for landfill closure and post-closure care should exist. If they have not already been developed, cost estimates can be prepared based on those plans.

## ***Exhibit 3-2***

### **Sample Solid Waste Program History/Chronology**

|        |   |
|--------|---|
| 1962   | Initiated collection activities in the central borough; wastes disposed of at Old Pond Farm, north field.   |
| 1968   | Expanded collection to five towns. Opened municipal transfer station.   |
| 1972-3 | Contracted with XYZ Corp. for feasibility study of waste-to-energy facility. Held three public meetings. Decision deferred.                                 |
| 1974   | Old Pond Farm landfill deeded to the county.  |
| 1976   | Set up citizen advisory committee on county solid waste planning; meetings every 6 months.  |
| 1977   | Purchased 12 new collection vehicles.   |
| 1981-4 | Initiated process to locate new landfill, including land use studies (ABC Corp.), technical studies (LMN Co.), and public meetings.                         |
| 1985-7 | Acquired land for new landfill. Initiated permit process with state DEP.  |
| 1988   | Discovered problems at Old Pond Farm landfill.  |
| 1990   | Received 3-year grant to start recycling program.   |
| 1991   | Purchased three vehicles and leased warehouse on Main Street for recycling program for newspapers, bottles, and cans covering about one-third of community. |
| 1992   | Received permit for new landfill; stopped accepting waste at Old Pond Farm landfill.  |
| 1993   | State university offered to donate composting system.   |

Next, you can compile an inventory of publicly owned or used equipment, vehicles, buildings, and land employed in MSW management. (See Exhibit 3-3.) For each item on the inventory, you might wish to ask such pertinent questions as: Is it owned or leased? When was it acquired? At what cost? What is its useful remaining life? The inventory also can include descriptive information such as the capacity, quantity, and location of physical assets and can serve as a basis for developing depreciation schedules and identifying operating costs, as described in the next chapter. The inventory can include the local government employees involved in the program, as well. How many are there? Where are they? What do they do? How often?

Cross-checking the inventory against the program description can be helpful: Are all the physical assets required for each program activity found on the inventory list? If not, why? Are some assets acquired through service contracts with vendors? If so, you might want to check your financial records for payments to vendors. Items on the inventory might reveal gaps in your program profile, representing potentially overlooked program activities and corresponding costs. The same logic applies to human resources.

### **Inventory of Physical Assets and Human Resources**

**Exhibit 3-3**

| <b>Sample Inventory Format</b>   |                          |              |              |                        |
|--|--------------------------|--------------|--------------|------------------------|
| <b>Program Element</b>   | <b>Bought or Leased?</b> | <b>When?</b> | <b>Cost?</b> | <b>Remaining Life?</b> |
| <p><b>Collection</b></p> <p>Equipment</p> <p>Vehicles</p> <ul style="list-style-type: none"> <li>- 6 compactor trucks</li> <li>- 1 trailer</li> <li>- 2 vans</li> <li>- 1 pick-up</li> </ul> <p>Structures</p> <ul style="list-style-type: none"> <li>- 1 garage</li> <li>- 1 maintenance shed</li> </ul>                |                          |              |              |                        |
| <p><b>Transfer Station</b></p> <p>Equipment</p> <ul style="list-style-type: none"> <li>- 1 front loader</li> <li>- 1 back loader</li> </ul> <p>Vehicles</p> <ul style="list-style-type: none"> <li>- 1 pick-up</li> </ul> <p>Structures</p> <ul style="list-style-type: none"> <li>- 1 scalehouse</li> </ul> <p>Land</p> |                          |              |              |                        |
| <p><b>Transport</b></p> <p>Equipment</p> <ul style="list-style-type: none"> <li>- 1 transfer trailer</li> </ul> <p>Vehicles</p>  |                          |              |              |                        |
| <p><b>Facilities</b></p> <p>Equipment</p> <ul style="list-style-type: none"> <li>- weighing scales</li> </ul> <p>Vehicles</p> <ul style="list-style-type: none"> <li>- 3 water trucks</li> </ul> <p>Structures</p> <p>Land</p>   |                          |              |              |                        |

## Organizational Review

You might also want to review your MSW program's position in your local government, including organizations that provide executive oversight, such as a Department of Public Works, Board of Freeholders or Supervisors, or the Mayor's office, as well as forums for public review and input, such as publicly supported citizens' advisory boards and planning committees. You can use the organizational chart or local government phone directory to identify relevant service providers, such as legal, payroll, motor pool, and health departments. For example, if the health department provides the inspectors who review operations at MSW facilities, then it is a service provider.

This review can help identify those public sector organizations to which the solid waste program reports or is otherwise responsible, as well as those organizations that provide services to the solid waste program. Both types of organizations can incur costs that should be recognized in FCA.

To ensure all costs are included, you might develop a checklist of potential support services to determine how they are provided to your MSW program. For example, billing services, which might be handled by a separate department entirely, should not be overlooked, because such services incur costs in supporting your MSW program. Similarly, centralized purchasing, data management, legal, and human resources services should be recognized in FCA. A list of potential support services appears later in this chapter in Exhibit 3-4 and in Chapter 4.

Finally, you might wish to collect and review your local government's relevant financial records and reports. Although several good guides to government accounting exist, the best approach to understanding financial reports is to communicate directly with the people responsible for keeping the records and preparing accounting reports. Some questions to consider include: What is being bought? What payments are made? Do they relate to MSW? Answers to these questions can help produce a more complete accounting of costs. Determining how your *accounts* are organized can help you determine feasible methods of identifying and allocating costs. (An account is a financial record that collects specific types of costs, revenues, or outlays.) Many state governments have established classifications (termed a uniform chart of accounts) for local government use. Solid waste services often are classified under sanitation, which is further broken down into sanitary administration, street cleaning, waste collection, waste disposal (with separate accounts for each facility), sewage collection and disposal, and weed control. Thus, it might take extra effort to determine costs of yard trimmings collection if the work is performed by street cleaning crews (or street department crews) accounted separately from other solid waste services.

## Financial Records Review

Typically, local governments classify outlays as current expenditures, capital outlays, or debt service and further classify these outlays by program and activity. Local governments usually maintain separate accounts for different types of expenditures and report them as separate line items in financial reports. Expenditures are grouped according to the types of items or services purchased, for example:

- Salaries and wages
- Employee benefits
- Purchased professional and technical services
- Purchased property services
  - Utility
  - Cleaning
  - Repair and maintenance
  - Rentals
  - Construction
- Other purchased services (e.g., insurance, printing, and travel)
- Supplies (e.g., general, energy, books and periodicals, and food)
- Property
  - Land
  - Buildings
  - Other improvements
  - Machinery and equipment
  - Vehicles

Accounts might or might not be structured to correspond to activities in your solid waste program. For example, there might be no separate account for waste collection. Lease payments for solid waste vehicles might be reported together with lease payments for all vehicles used by your local government's agencies. Therefore, you might need to disaggregate or allocate accounts (see Chapter 4). On the other hand, accounts might be more disaggregated than needed for FCA. For example, labor costs might be reported separately for different transfer stations; such data can be combined for FCA. You might need to spend time to learn what your local government's accounts contain and mean.

## Staying Organized

In general, you can work with the available financial information, filling in the gaps and making appropriate adjustments. To ensure that you identify all gaps and know which data to look for, you might wish to develop a systematic "cost framework." This framework can help you avoid becoming lost in the details, double-counting some costs, or missing costs.

An example of an organizing framework is presented in Exhibit 3-4. The columns should cover all the relevant categories your local government uses to report its expenditures. The rows should include several components:

- All MSW activities in the system
- Oversight
- Support services

The rows in Exhibit 3-4 represent *cost centers*. A cost center is any municipal activity that receives separate accounting attention. Depending on the scope and complexity of your solid waste management program, you might want to establish cost centers for any or all of the following:

- Collection
  - Mixed waste collection
  - Curbside (or backyard) collection of recyclables
  - Drop-off centers for recyclables
  - Yard trimmings collection
  - Other
- Waste transfer stations
- Waste transport
- Waste management facilities
  - MRFs
  - Compost facilities
  - WTE facilities
  - Landfills
- Public education and outreach
- Other (e.g., household hazardous waste)
- Oversight
- Support services

You can use an organizing framework to determine what financial information is relevant and whether or not it is included in available financial reports. As long as there is no overlap or gaps between the columns (financial accounts) or rows (MSW activities), the framework can help you avoid doublecounting and gaps.

Because each MSW activity might have up-front, operating, and back-end costs, Exhibit 3-5 shows another organizing framework. To combine the two approaches illustrated in Exhibits 3-4 and 3-5, add rows for oversight and support services for each of the solid waste program activities listed in Exhibit 3-5.



**Exhibit 3-4**

| <b>Sample Organizing Framework</b>    |                           |                           |             |                          |                 |                       |
|---------------------------------------|---------------------------|---------------------------|-------------|--------------------------|-----------------|-----------------------|
| <b>SOLID WASTE PROGRAM ACTIVITIES</b> | <b>Financial Accounts</b> |                           |             |                          |                 |                       |
|                                       | <b>Labor</b>              | <b>Vehicles Equipment</b> | <b>Rent</b> | <b>Contract Services</b> | <b>Interest</b> | <b>Other Payments</b> |
| 1. Collection                         |                           |                           |             |                          |                 |                       |
| 2. Transfer Stations                  |                           |                           |             |                          |                 |                       |
| 3. Transport                          |                           |                           |             |                          |                 |                       |
| 4. Facilities                         |                           |                           |             |                          |                 |                       |
| 5. Sales                              |                           |                           |             |                          |                 |                       |
| 6. Education and Outreach             |                           |                           |             |                          |                 |                       |
| 7. Other                              |                           |                           |             |                          |                 |                       |
| <b>Support</b>                        |                           |                           |             |                          |                 |                       |
| Accounting                            |                           |                           |             |                          |                 |                       |
| Billing                               |                           |                           |             |                          |                 |                       |
| Building Operations                   |                           |                           |             |                          |                 |                       |
| Clerical                              |                           |                           |             |                          |                 |                       |
| Communications                        |                           |                           |             |                          |                 |                       |
| Data Processing                       |                           |                           |             |                          |                 |                       |
| Insurance                             |                           |                           |             |                          |                 |                       |
| Legal                                 |                           |                           |             |                          |                 |                       |
| Payroll                               |                           |                           |             |                          |                 |                       |
| Personnel                             |                           |                           |             |                          |                 |                       |
| Purchasing                            |                           |                           |             |                          |                 |                       |
| Records Management                    |                           |                           |             |                          |                 |                       |
| Other                                 |                           |                           |             |                          |                 |                       |
| <b>Oversight</b>                      |                           |                           |             |                          |                 |                       |
|                                       |                           |                           |             |                          |                 |                       |

**Exhibit 3-5**

| <b>Sample Organizing Framework</b>                                   |                           |                           |             |                          |                 |                       |
|--|---------------------------|---------------------------|-------------|--------------------------|-----------------|-----------------------|
| <b>SOLID WASTE PROGRAM ACTIVITIES</b>                                | <b>Financial Accounts</b> |                           |             |                          |                 |                       |
|  | <b>Labor</b>              | <b>Vehicles Equipment</b> | <b>Rent</b> | <b>Contract Services</b> | <b>Interest</b> | <b>Other Payments</b> |
| 1. Collection<br>– Up-Front<br>– Operating<br>– Back-End             |                           |                           |             |                          |                 |                       |
| 2. Transfer Stations<br>– Up-Front<br>– Operating<br>– Back-End      |                           |                           |             |                          |                 |                       |
| 3. Transport<br>– Up-Front<br>– Operating<br>– Back-End              |                           |                           |             |                          |                 |                       |
| 4. Facilities<br>– Up-Front<br>– Operating<br>– Back-End             |                           |                           |             |                          |                 |                       |
| 5. Sales<br>– Up-Front<br>– Operating<br>– Back-End                  |                           |                           |             |                          |                 |                       |
| 6. Education and Outreach<br>– Up-Front<br>– Operating<br>– Back-End |                           |                           |             |                          |                 |                       |
| 7. Support Services  |                           |                           |             |                          |                 |                       |
| 8. Oversight   |                           |                           |             |                          |                 |                       |
| 9. Other   |                           |                           |             |                          |                 |                       |