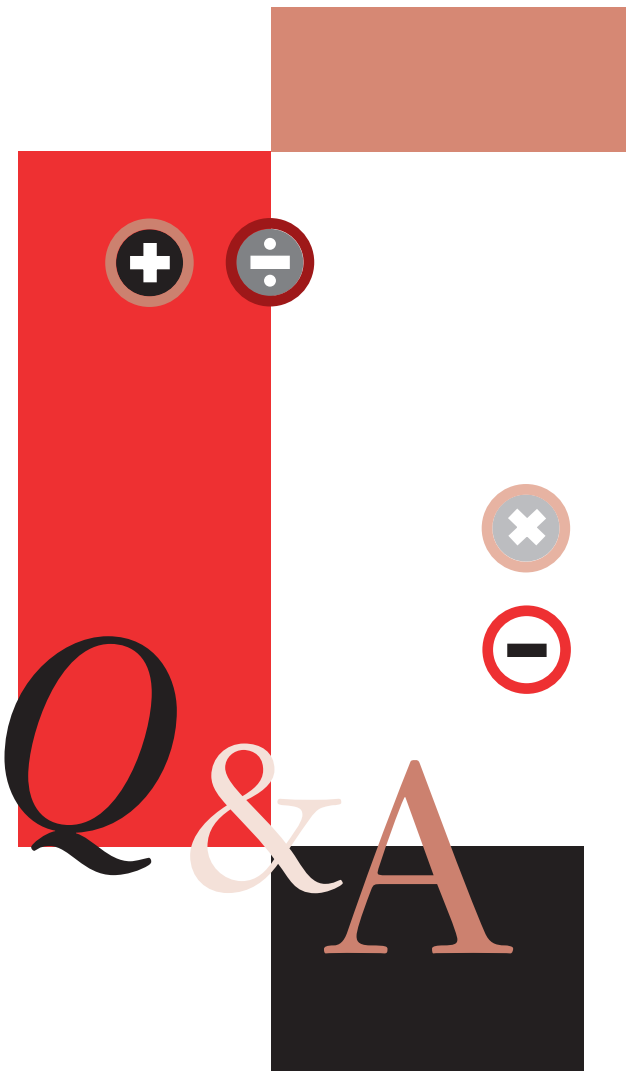




# Questions and Answers About Full Cost Accounting





**I**n September 1996, the U.S. Environmental Protection Agency (EPA), in partnership with several state and national solid waste and governmental organizations, held its second satellite forum on full cost accounting (FCA). This interactive videoconference, “Planning, Pricing, Performance: The Business of Solid Waste Management,” reached an audience of approximately 4,550 viewers at 280 downlink sites nationwide. The audience included solid waste managers, elected officials, finance officers, recycling coordinators, and others interested in solid waste issues. The forum featured a panel of four local government solid waste managers and one policy analyst, who spoke about their experiences with FCA. This booklet features some of the questions and answers discussed during the 2-hour forum.

**FCA FORUM PANELISTS:**

- **John Abernethy**—Operations Manager for the Waste Management and Recycling Division of Sacramento County, California (population 1.2 million).
- **Nancy Nevil**—Solid Waste Manager for the city of Plano, Texas (population 196,500).
- **Lowell Patterson**—Director of Public Works for the city of Columbia, Missouri (population 75,000).
- **Lynn Scarlett**—Vice President of Research at the Reason Foundation in Los Angeles, California.
- **Elizabeth Treadway**—Director of Environmental Services for the city of Greensboro, North Carolina (population 200,000).


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# What Is Full Cost Accounting?

## 1. IS THERE A STANDARD DEFINITION OF FCA?

Yes. FCA is a method of accounting for all monetary costs of resources used or committed for municipal solid waste (MSW) services. FCA provides decision-makers with the “whole picture” of MSW costs in their communities on an ongoing basis. FCA goes beyond the limits of cash flow accounting, which is often used by local governments, by considering direct and indirect (overhead) operating costs of MSW services as well as upfront (past) and backend (future) expenses. Knowing the complete costs of MSW management enables local government officials to make more informed decisions about their programs, identify opportunities for streamlining services, facilitate cost-saving efforts, and better plan for the future.

## 2. HOW DOES FCA DIFFER FROM WHAT CITIES ALREADY DO?

Many cities currently use budget-based, or cash-flow, accounting—they report their current costs and figure their expenditures in terms of their current budget. The biggest difference between budget-based accounting and FCA is the allocation of costs. FCA is based on the functional allocation of resources. FCA spreads costs over the life of a program or service. It also includes overhead and future costs, which might not be considered under budget-based accounting. Many communities, for example, face the problem of post-closure care for their landfills. FCA can help them think

about and plan for the costs associated with closing their landfills.

### **3. DOES FCA TAKE INTO ACCOUNT ALL ASPECTS OF INTEGRATED SOLID WASTE MANAGEMENT?**

Yes. FCA is about identifying **all** the activities that communities undertake in their solid waste programs including recycling and composting. FCA helps managers create the best balance of program components. It also helps managers determine how they can deliver an integrated set of components in the most efficient manner possible. Many solid waste programs are created by prior management or political decisions. In these cases, FCA can help managers work more efficiently within the established frameworks.

### **4. DOES FCA TAKE INTO ACCOUNT THE ENVIRONMENTAL, HEALTH, AND SOCIAL COSTS OF MSW MANAGEMENT?**

No. FCA does not account for these types of costs. Noise, for example, is a type of social cost associated with solid waste management. A community might have trucks going up and down the street due to a particular waste management program. It is a real cost, but it is not easily measurable. FCA also does not include the costs of environmental impacts, such as air emissions associated with methane gas that might be coming from a landfill. While these costs are not quantifiable through FCA, they are still important considerations that communities might examine when making their decisions.

**5. WILL THE USE OF FCA DISCOURAGE COMMUNITIES FROM CONSIDERING THE ENVIRONMENT WHEN THEY CONSIDER SOLID WASTE MANAGEMENT OPTIONS?**

No. While FCA only takes into account the tangible, monetary costs associated with solid waste management, communities can and should weigh environmental, social, and health costs in their decision-making. Siting a new landfill, for example, might be the least expensive option for managing solid waste, but a community might decide not to do it for environmental reasons and might start a recycling program instead.

FCA encourages communities to see each solid waste management option in the context of the solid waste system as a whole. FCA makes it clear that changes in one program (e.g., recycling) can have effects on other programs, such as garbage collection, processing, and disposal, as well as impacts on overhead costs.

**6. IS IT POSSIBLE TO IMPLEMENT FCA IN THE ABSENCE OF A GENERAL LEDGER ACCOUNTING SYSTEM?**

Yes. FCA can be implemented for any solid waste management system and any accounting system. While detailed accounting data, such as that provided by a general ledger system, can be useful, it is not essential. Where accounting data are limited or difficult to obtain, however, more effort might be involved in setting up an FCA system.



# Getting Started With FCA

## 7. WHY DO COMMUNITIES BEGIN USING FCA?

There are many reasons why communities begin using FCA. For example:

- To explain more clearly MSW costs to citizens.
- It is mandated by law in some states.
- To help local governments run solid waste program operations more like independent businesses.
- To determine the cost of alternative waste management options.
- To determine potential areas of cost savings.

In Sacramento County, California, the government took over the refuse collection operation from the private sector. At the same time, the county established a landfill and two transfer stations to serve the regional area. Smaller cities in the county were concerned that they would be charged a disproportionate share of the cost of operating the landfill. The county used FCA to demonstrate that the rates would be fair to everyone.

In Greensboro, North Carolina, FCA grew out of two initiatives. In the late 1980s, the state moved FCA to a “highly recommended” status within its solid waste laws, which provided an impetus for local governments to begin practicing FCA. Greensboro’s solid waste division was determined to run its operation like a business. The solid waste division runs both collection and disposal, and it was critically important that the division understood where



the costs were, how to capture efficiencies, and how to implement new programs. By implementing FCA, the division now offers five different collection services and three different services at the landfill and knows the cost of each of those operations.

In Plano, Texas, the Solid Waste Department wanted to know if offering other service levels and restructuring their whole collection system—such as picking up yard trimmings for composting rather than for disposal—would be less expensive. The department used FCA to determine what each service level would cost. Also, the department was attracted to the idea of using FCA to benchmark its program against other cities' programs.

## **8. IS THERE ONLY ONE WAY TO CONDUCT FCA?**

No. It is important for each community to put the FCA process in perspective with its waste management goals. Each community will look at waste management costs differently. Each will come up with a unique way to establish a recordkeeping mechanism, keep track of costs, and identify expenditures such as equipment maintenance.



# **Implementing FCA**

## **9. HOW LONG DOES IT TAKE TO IMPLEMENT FCA?**

It takes about 2 to 3 years to fully implement FCA and get all employees comfortable with it. Even then, the process will still evolve. In Greensboro, North Carolina, it took 3 years to

sort out FCA to a level of detail where staff could effectively use it, and Greensboro continually adds elements to its system.

## **10. WHAT IS THE GREATEST DIFFICULTY IN IMPLEMENTING FCA?**

One major FCA challenge communities often face is getting other divisions, such as fleet maintenance or the legal or personnel department, to identify the costs they are charging to the solid waste department.

Another difficulty can be getting the board or city council to understand FCA. A community might start setting up reserves for closure costs of the landfill, for example. Then, if there is a budget crisis, the board might want to tap into those funds. They might not understand why the funds have been set aside.

Another problem that solid waste managers face is that FCA will give them different figures from traditional general accounting or budget-based accounting. They might face the problem of politicians saying, “The budget says this; how come you’re telling me it costs that?”

## **11. WHAT IS THE IDEAL MINIMUM OR MAXIMUM POPULATION REQUIRED TO USE FCA?**

FCA is not size-dependent. It is simply a common-sense approach to managing money and knowing where the money is being used. Small communities should start by identifying all the activities they are engaged in. For each activity, they should identify the associated costs, develop a mechanism to sum them up per unit, and then report them. This formula is relevant to a city, a county, or a single household.

Finding the time, resources, and skills necessary to set up an FCA system can be the principal barrier facing a small city. Here, state grant programs can be of help. While these programs often support capital additions, they can and are being used to help localities develop FCA capabilities.

FCA principles are the same in a large city like New York. It is a matter of putting time and energy into the process, which is an order of magnitude more for New York. The data exist; putting the resources in place to assemble it, analyze it, allocate it, and set up appropriate accounts might be more difficult.



## Benefits of FCA

### **12. WHAT TYPES OF CHANGES OR BENEFITS HAVE COMMUNITIES REALIZED DUE TO FCA?**

Communities have realized the following benefits from using FCA:

- Rates or tipping fees are set correctly and fairly.
- Budget requests are defended with clear data.
- Privatization questions are answered based on complete cost data.
- More services are offered for less money.

In Los Angeles, California, the mayor was concerned about the cost of solid waste management, so the city began moving towards FCA. Through that system, it has been able to set benchmarks, make comparisons, and identify efficiencies. FCA allows the city to figure out how it can do better with its current programs.

The city of Phoenix, Arizona, is another example. Some years ago, the city began using FCA and competing with the private sector for solid waste services in different parts of the city. In the initial bid rounds, the private sector won. The public sector took its new accounting information and decided that it had to do better. The city then identified some areas where efficiency could be improved and won back some of the bids.

Sacramento County, California, also realized new efficiencies in the area of collection. The county was considering changing from a manual, two-person collection system to an automated, one-person collection system. The public supported the two-person system, but the cost was prohibitive. The county educated the public about the one-person system and explained that if it worked, they might receive a rate reduction for that service. With the new service, the county was able to keep rates down and stabilize them over the last 3 years.

Sacramento County also used FCA to change the level of service provided for pickup of recyclables and compostables. The county decided that weekly collection services were very expensive for the services rendered. The county is currently involved in a pilot program that is examining every-other-week collection instead. The county estimates that it can save \$1.3 million in this particular program with this change.

In Columbia, Missouri, FCA allows the public works department to do meaningful cost comparisons in performance measurements with other cities and track performance from year to year. Columbia has used FCA to effectively evaluate the impact new programs have on rates and to set rates to assure financial stability.

### **13. WILL USING FCA SAVE MONEY?**

It depends. Ultimately, the more departments know about what it takes to deliver a unit of service, the more effectively they can manage that unit cost. FCA points out where departments are inefficient, where they can look for cost reductions, and where they might need to change service delivery.

In Columbia, Missouri, the Public Works Department has been able to take the breakdown of its unit cost and compare it to other communities. If a similar community is providing the same recycling service as Columbia, but at a lower rate, that illustrates an opportunity for Columbia to change and become more efficient. Columbia has increased its efficiency due to comparisons like this, which, in turn, has resulted in cost savings. Communities must be sure to make comparisons with communities that have similar services and similar populations, however.

FCA also gives communities the ability to more evenly match the rate they are charging for different services (e.g., residential versus commercial) to the actual costs of those services.

Through FCA, Columbia found that the rate charged for one element of its refuse service carried the cost for some of the others. During rate adjustments, Columbia was able to even out the rates for all services.

FCA can help communities save or reserve money, but that can lead to differing opinions about what to do with the money. A community might save reserves that it wants to allocate for future uses, but others might want to give that money back to residents in the form of a fee reduction instead. FCA does not automatically save money, however, and it cannot guarantee that savings are returned to the customer.

#### **14. CAN FCA HELP COMPARE OPENING A NEW LANDFILL VERSUS BUILDING A WASTE-TO-ENERGY INCINERATOR?**

Yes. The principles of FCA are exactly the same no matter how you apply them. FCA is about identifying, reporting, and summing up measurable costs. It can help communities compare one alternative to another and understand the costs. The question really is, “How can you make that comparison without FCA?”

#### **15. WILL THE USE OF FCA PROMOTE OR ENHANCE THE REGIONALIZATION OF SOLID WASTE FACILITIES?**

No. The use of an FCA approach will not, in and of itself, determine whether any particular regionalization proposal is cost-effective. That will depend on the proposal as well as the characteristics of the region. Use of FCA will help ensure that regionalization proposals are analyzed properly.



## **FCA and Rate Setting**

#### **16. CAN FCA HELP IN SETTING UP UNIT-BASED FEES (“PAY-AS-YOU-THROW”)?**

Yes. FCA can be a useful tool in developing fair and equitable service fees. It also allows communities interested in pay-as-you-throw programs to evaluate the effect, in terms of system costs and revenues, of implementing such a

program. When a pay-as-you-throw program is implemented, for example, residents might choose to recycle or compost at higher levels. This behavioral change has a direct effect on system costs and revenues. FCA can be used to evaluate and anticipate these shifts in costs.

One of the problems some communities face with pay-as-you-throw programs is balancing systems costs and revenues. Seekonk, Massachusetts, used FCA to understand the base costs for its solid waste system. With that information, the town was able to set its flat and variable fees for its pay-as-you-throw program. While FCA doesn't provide an answer in terms of what a community should charge on a variable-rate basis, it can provide the baseline information to determine what the base costs are.

In some circumstances, however, rate setting still comes down to a political decision. A community might determine an appropriate rate using FCA but realize that it would not be a great enough financial incentive to encourage people to recycle, which might be a community goal.



## FCA and Recycling

### **17. CAN FCA HELP MAKE RECYCLING PROGRAMS PROFITABLE?**

No. Waste will continue to be generated by the residential and commercial sectors, communities will continue to have some level of responsibility for managing it, and those services are going to cost money. One of the challenges faced by solid waste managers is to find the least-cost

management options and, if the community has a recycling component, to examine how it can make that the most efficient system possible.

### **18. DOES FCA HELP TO SUPPORT RECYCLING? HOW?**

No. FCA does not champion recycling or any other waste management option. It provides an important tool for analyzing and improving system performance and cost-effectiveness. A community can use FCA to determine the best way to provide recycling services, however.



## **Privatization**

### **19. HAS FCA BEEN EFFECTIVE IN ADDRESSING PRIVATIZATION QUESTIONS?**

Yes. Greensboro, North Carolina, faced this issue, and FCA was instrumental in dealing with it. When the city implemented its recycling program, it was required to compete against the private sector. To do that, the city had to know what it was willing to spend to implement the program. It was critical to be able to value the program for the community and decide whether the private sector could meet Greensboro's standards and costs. Now the city is running the service because it outperformed the private sector.

### **20. CAN FCA GUARANTEE THAT A CERTAIN SERVICE WON'T BE PRIVATIZED?**

No. FCA, in and of itself, cannot keep a service from being privatized. However, FCA can show whether it is better to privatize or not.



## **21. WHAT IS THE RELEVANCE OF FCA FOR COMMUNITIES THAT CONTRACT OUT ALL OF THEIR SOLID WASTE MANAGEMENT SERVICES?**

Unless a community is entirely out of the business of solid waste management—that is, individual citizens simply subscribe directly with a private hauler for service—local government is still going to have costs associated with the contract. The city will have monitoring costs, various overhead costs, and education costs, depending on the role the government actually plays. Communities need to know what they are paying out of pocket for the contract as well as the other overhead, monitoring, and contract-management costs. FCA can help communities understand and track these costs. This information becomes critical when contracts are up for renewal or new vendors offer services. In fact, any competitive-contracting decision would require knowledge of these costs ahead of time.



## **Cost of FCA**

## **22. HOW IS THE COST OF FCA BEST JUSTIFIED TO THE PUBLIC?**

FCA is an approach, not a fixed product. It is possible to tailor a cost-effective FCA system to meet the needs of most, if not all, solid waste management systems. Assuming that FCA has been implemented in an appropriate manner, the cost can best be justified to the public by publicizing the uses and benefits that solid waste managers make of FCA, focusing on uses that particularly interest the public. Stress that:

(1) FCA allows solid waste managers to operate their programs as an efficient streamlined business, carefully accounting for all costs; (2) FCA is the best way to get a handle on solid waste related issues, such as privatization, and getting these issues “right” can save the public money; and (3) FCA might have up-front costs (e.g., data development, software installation, and consulting assistance), but these costs purchase a management information capability that can save money over the long run.



This conference was sponsored by EPA in partnership with:

- American Public Works Association (APWA)
- International City/County Management Association (ICMA)
- Maryland Department of Environment
- National Association of Counties (NACo)
- National Recycling Coalition (NRC)
- National Solid Waste Management Association (NSWMA)
- Solid Waste Association of North America (SWANA)
- U.S. Conference of Mayors



## FCA Resources

EPA has published several documents that are useful for any community interested in learning about or implementing FCA.

- *Making Solid (Waste) Decisions With Full Cost Accounting* (EPA530-K-96-001) is a short primer that explains the basic concepts of FCA and provides short case studies about communities that have used FCA successfully. It also presents some of the challenges of FCA and the relationships between FCA and enterprise funds and pay-as-you-throw programs.
- *Full Cost Accounting for Municipal Solid Waste: A Handbook* (EPA530-R-95-041) describes the key concepts and benefits of FCA. It explains many of the financial terms used in FCA and the specific costs that are considered. While the handbook is not a step-by-step “how-to” document, it does describe the steps involved with implementing FCA for solid waste management. It is a comprehensive overview and a valuable resource for local governments.

These documents can be ordered through EPA’s RCRA Hotline. Call 800 424-9346 or for the hearing impaired call TDD 800 553-7672. In the Washington, DC, area, call 703 412-9810 or TDD 703 412-3323. Web site: [www.epa.gov/fullcost](http://www.epa.gov/fullcost).





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