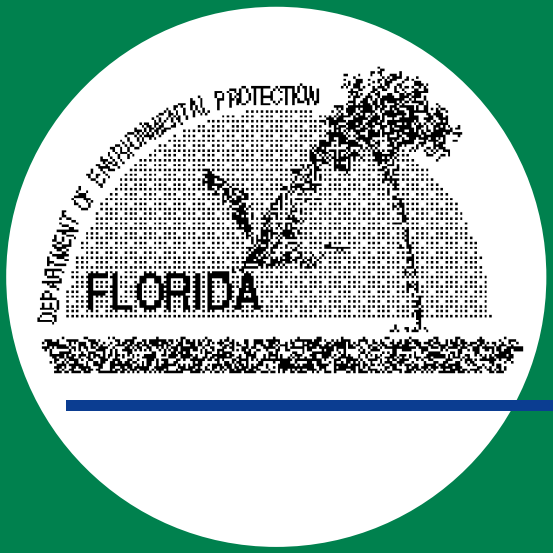

Florida Department of Environmental Protection

Municipal Solid Waste Management Full Cost Accounting Workbook

for Local Governments in Florida

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June 30, 1997

ACKNOWLEDGMENTS

The Florida Department of Environmental Protection (DEP) gratefully acknowledges use in this workbook of information found in *Full Cost Accounting for Municipal Solid Waste Management: A Handbook* prepared in October 1995 by the United States Environmental Protection Agency (EPA), Office of Solid Waste. Funding for the preparation of this workbook was provided by EPA Region 4.

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1.0 INTRODUCTION

Currently, Florida law requires that local governments disclose annually to the public and to the Florida Department of Environmental Protection (DEP) the full cost of solid waste management services. The requirements set forth in Florida Statute Chapter 403.7049 and Rule 62-708, Florida Administrative Code, apply only to local governments that provide, directly or by contract, solid waste management services. The law addressed concerns on the part of the legislature that the public was largely unaware of the substantial cost associated with the solid waste management services provided to communities by local governments.

Many state and local government officials can attest to increased concern on the part of citizens about the rising costs of providing municipal solid waste (MSW) services. Neighborhood protests against the siting of landfills and other MSW facilities, desire to achieve high rates of recycling, and interest in the privatization of certain MSW services are among the stimuli that have prompted several state and local governments to encourage better management of MSW.

Full cost accounting (FCA) is a tool that can help local governments assess and report accurately and consistently the full costs of managing MSW. When citizens and public officials debate the relative merits of different MSW management practices, the information available from FCA systems can enhance the discussion by providing accurate data on the costs of collection, disposal, recycling, composting, and waste-to-energy program alternatives. Because FCA offers a systematic approach for determining the full costs of MSW services, managers can identify accurately the price of different MSW program options and contemplate adjustments to current levels of service. Local governments can use the data provided by FCA systems to disclose the costs of MSW management, discuss those costs with their citizens, and identify potential cost savings. Further, FCA data can be used to help establish rates and user fees that are sufficient to recover the full costs of the MSW services provided.

DEP seeks to encourage local governments to adopt sound management practices for MSW activities and actively promotes recycling and waste minimization initiatives. DEP believes that understanding the full costs of solid waste management and communicating that information to the public will lead to sound management decisions. Because of the role that FCA can play in improving the efficiency and cost-effectiveness of MSW programs, DEP has prepared this workbook to help local governments in Florida understand and implement FCA.

Section 2.0 of this workbook presents a discussion of the purpose of the workbook. Section 3.0 describes the requirements of the state of Florida for public disclosure of FCA data. Section 4.0 presents a discussion entitled "What is Full Cost Accounting?" Section 5.0 discusses the potential benefits of FCA. Section 6.0 sets forth the basic principles of FCA. Section 7.0 outlines the basic differences between cash flow accounting and accrual accounting. Section 8.0 presents a discussion of how local governments can begin to use FCA. Section 9.0 describes how to use the forms in this workbook. Section 10.0 presents a discussion of non-fee-based revenues. Section 11.0 presents information about allocating costs by customer class. Section 12.0 describes how to use certain standard units of measure to calculate costs for MSW programs. Section 13.0 outlines requirements for the annual disclosure by local governments of FCA data to the public and to DEP. Appendix A of this workbook contains **Forms 1 through 5** and **Summary Forms A, B, and C**. Appendix B contains five check lists that local governments can use to identify the types of costs that might be included in the calculation of the full cost of MSW operations. Appendix C is a glossary of full cost accounting terms. Appendix D presents a sample notice of public disclosure and a sample certification that may

be used by local governments in complying with requirements under Florida law for annual disclosure of FCA data.

2.0 PURPOSE OF THE WORKBOOK

DEP prepared this workbook for use by local government solid waste managers and their staffs. The primary purpose of the workbook is to serve as a tool for local governments to use in identifying, collecting, tracking, and analyzing the costs incurred in operating their integrated solid waste management systems.[1] Solid waste professionals can use the workbook to gather data to analyze the costs incurred to operate different segments of MSW programs and devise methods to increase the efficiency and cost-effectiveness of those programs. Finally, the forms and check lists in the workbook, and the procedures it describes, can help local governments report to their communities, and to DEP, the full cost of MSW management activities in a manner that helps simplify any further processing and analysis found necessary.

The workbook is available to all local governments in Florida to help them identify **all** the costs of their solid waste management programs. DEP believes that many local governments may not account for all the costs incurred in operating MSW systems and therefore may underestimate the amounts of corresponding streams of revenues that are required to keep those systems running. In such a circumstance, FCA data can be used to revise the budget for the MSW program or adjust user fees to reflect the full cost of the MSW management services provided by the local government.

While DEP believes that FCA can be a useful tool for effectively managing integrated solid waste systems, the workbook does not attempt to demonstrate how FCA would be applied to specific management decisions, such as whether or not to offer a composting program. While FCA provides to local governments information that can be useful in making such determinations, it cannot provide "cookbook" solutions for complex MSW management decisions that involve many different variables. Because each MSW program is unique, the workbook also does not prescribe a step-by-step method for all local governments to use to implement FCA systems.

To the extent possible, the FCA method prescribed in this workbook has been simplified to meet the needs of local governments whose solid waste management systems are of average size and complexity. A small percentage of local governments in Florida whose solid waste management systems are very large or highly complex may find this method difficult to use in tracking the full costs of solid waste management services. Local governments that experience such difficulties are encouraged strongly to consult professionals in the field of cost accounting to obtain expert assistance in developing and implementing FCA systems that meet their specific needs and circumstances.

3.0 FLORIDA REQUIREMENTS FOR PUBLIC DISCLOSURE OF FCA DATA

Pursuant to Rule 62-708, Florida Administrative Code, all counties and municipalities in Florida are required to disclose annually to the public, and to DEP, the full cost of their solid waste management

[1] Integrated solid waste management systems are systems that incorporate several different approaches to or activities for managing solid waste (for example, recycling, composting, and landfilling).

services. To the extent that different MSW services are provided, costs for collection, disposal, and recycling activities should be reported separately. Further, costs for each activity should be allocated between residential and nonresidential users. DEP administers the implementation of the law and monitors the compliance of each local government in reporting the requisite information.

A county government that has implemented a countywide special assessment or other countywide revenue-producing mechanism to fund any solid waste management program or any cost element of such a program must consider the entire county as its service area when determining and reporting the full costs of that countywide solid waste program or cost element. Municipalities or other entities that are included in the service area and that receive solid waste management services funded as part of a countywide special assessment or other revenue-producing mechanism should not include those services in their calculations of full cost.

4.0 WHAT IS FULL COST ACCOUNTING?

FCA is a systematic method of identifying, summing, and reporting the costs incurred in providing solid waste management services to communities. In addition to the obvious and direct costs of MSW management, FCA includes both "overhead" and "hidden" costs incurred to provide necessary support services for solid waste programs. Moreover, FCA considers the complete life cycle of MSW services -- from planning and administration (for example, permitting and construction of facilities) through proper closure and, if needed, long-term care of MSW facilities. FCA generally is consistent with generally accepted accounting principles (GAAP) for governments and private entities.

For a variety of reasons, most communities and their citizens do not know what their MSW management services actually cost, making it more difficult to reach good decisions about MSW options. FCA is a proven method of understanding and reporting what MSW management really costs. FCA can help prevent misconceptions that arise from a simple lack of cost information and support effective and informed judgments by citizens and clear management decisions. Just as a business must understand its costs to operate effectively, so must local governments understand the actual costs of managing solid waste to operate effectively.

Most local governments budget for and operate their MSW management activities on a cash basis. FCA, however, is not the same as "cash flow" or "general fund" accounting. For activities such as MSW management that are -- or ought to be -- funded through cost-based user fees, cash flow accounting may give a distorted picture of annual costs because it focuses exclusively on current outlays of funds. However, not all costs of solid waste management result from current outlays of funds. In fact, substantial costs often are incurred for past or future outlays. In seeking to identify and include all direct and indirect costs associated with providing a particular service or program, FCA takes into account annual costs that are incurred during the operating life of a facility as a result of past and future outlays of funds. For example, the costs of capital assets may be depreciated over the expected useful life of those assets, while the future costs of closure and long-term care may be amortized evenly over the expected operating life of a MSW facility.

5.0 POTENTIAL BENEFITS OF FCA

For many local governments, FCA offers a new and innovative approach to the management of MSW operations. For others, it may be simply an extension of existing management policies. DEP believes,

however, that all communities can derive substantial benefits from the use of FCA. Through the use of FCA, communities can:

- **Determine the cost of MSW management** - The most important benefit of FCA is that local governments can use it to gain a more thorough understanding of what MSW management operations actually cost. Lacking FCA, identifying the full cost of MSW operations can be exceedingly difficult, particularly when such operations are financed through the general fund of the local government. Even when the direct costs of MSW management are not mingled with other expenditures, it can be easy to overlook the costs of certain "indirect" or "overhead" activities that are provided to support the MSW system but managed under separate accounts. Further, the costs of managing MSW facilities likely will be underestimated unless both "up-front" costs (for example, the costs of acquisition of land and permitting) and back-end costs (for example, the future costs of closure and long-term care) are recognized fully. By gaining a better understanding of the many types of costs that might be incurred to operate MSW systems, local governments will be able to make more informed decisions about the overall management of their programs.

- **Demonstrate MSW costs to the public more clearly** - Using FCA systems, local governments can collect, compile, and analyze data that can be used to demonstrate to the public what MSW management actually costs. Although some people might significantly underestimate the cost of MSW management, others might overestimate its cost. The use of FCA can provide "bottom-line" numbers to present to the citizenry. Further, local governments can use data generated by FCA systems to address specific concerns voiced by the community about the cost and quality of MSW services.

- **Adopt a more business-like approach to MSW management** - By focusing attention on costs, FCA fosters a more business-like approach to MSW management. Consumers increasingly expect value for their tax dollars, demanding an appropriate balance between the cost of goods or services and the quality of such goods or services. FCA can help local governments identify opportunities for cost savings and root out waste and inefficiency in MSW management systems. Through analyses of the costs of different MSW activities, FCA also can help local governments ensure that their communities receive the maximum benefits that can be derived from various levels of service.

- **Improve Methods of Evaluating Privatization Initiatives** - FCA can help local governments use actual cost data to evaluate the potential advantages and disadvantages of privatizing certain MSW management activities. While competition among vendors can result in seemingly favorable bids for contracts for MSW services, local governments can assume a stronger position when bargaining with vendors if they know what it costs (or would cost) to do the work themselves.

- **Determine an Appropriate Mix of MSW Services** - FCA provides local governments the ability to break out and compare the costs of providing different types of MSW services. FCA can help a community to "fine tune" MSW programs to increase cost-effectiveness and identify options for increasing efficiency. Once a local government

has determined the full cost of each sold waste program and has calculated the cost per customer (total program costs divided by the number of customers for that program), it will be better able to evaluate the financial performance of its various programs. By enabling local governments to determine which MSW programs and activities provide the greatest value to the consumer, FCA helps communities use limited program dollars effectively to offer an advantageous mix of MSW services.

- **Aid in Setting Appropriate Rates and User Charges** - FCA helps local governments establish user fees that reflect the full cost of providing solid waste services. Once all the costs of providing solid waste services have been identified through the use of FCA, appropriate rates and charges can be established to recover those costs.[2]

The benefits of FCA do not come free, of course. Substantial effort will be required, particularly in the beginning, to identify correctly and systematically the costs of capital expenditures, past and future outlays, and shared services, including overhead. The amount of effort required to implement FCA will depend primarily on the format and condition of a local government's financial records. For some, the extra work will be minimal. For others, additional research into records and discussions with other staff, other departments, and contractors may be necessary. Some additional calculations and the selection of a method for the allocation of overhead costs also may be required -- especially the first time a local government attempts to implement FCA. Once data have been assembled and a framework established, however, generation of subsequent annual FCA reports likely will be much easier. Because FCA is recognized widely as the wave of the future for management of MSW systems, more and more local governments are taking advantage of FCA to achieve their planning, management, information, and cost-saving goals.

6.0 BASIC PRINCIPLES OF FCA

The workbook was designed to allow local governments flexibility in choosing the methods of calculating the full cost of solid waste services and to accommodate diversity among management, budgeting, and accounting methods used by local governments. All local governments, however, can apply FCA, regardless of how they structure their programs or keep their records.

The following basic principles, which are the foundation of FCA, are incorporated into this workbook. When implemented properly, FCA:

- Focuses on all aspects of MSW management
- Identifies all activities to be costed
- Clarifies which costs are to be included
- Inventories buildings, equipment, and properties used in MSW activities
- Identifies human resources involved in the MSW management process
- Includes costs for contractors and other external providers of MSW services
- Works with and supplements available financial data

[2] It is not required that local governments in Florida use this workbook to establish rates for solid waste services. Rather, the workbook is offered to local governments that believe they may benefit from its use in developing charges and tipping fees for solid waste services.

- Develops an organizing framework
- Avoids double-counting
- Includes appropriate shares of indirect costs for activities that support MSW management
- Provides detailed cost information in a simple, concise format

In keeping their books, most local governments use "cash" or “modified cash” bases of accounting. This workbook, however, uses an "accrual basis” accounting system to help ensure the full recovery of all costs for MSW services and to assist in establishing appropriate user fees for solid waste services.

7.0 CASH FLOW ACCOUNTING vs. ACCRUAL ACCOUNTING

Historically, accountants for local governments have used “cash flow accounting” (also known as cash basis accounting) to track the inflows and outflows of current financial resources. Under the procedures of cash flow accounting, outlays are recorded when cash is paid out for goods and services. Cash flow accounting tracks the use of current financial resources, thereby enhancing accountability for expenditures of tax dollars and other public funds. The costs to local government of providing MSW services are, however, more similar to those of a private business enterprise and may be more appropriately tracked by an “accrual” system of accounting.

Accrual accounting is an accounting system that focuses on the flow of economic resources and, regardless of the timing of related cash flows, recognizes costs as resources are committed. Because the establishment of MSW facilities, particularly landfills, may entail significant expenditures both before and after the operating life of those facilities, accounting for those costs on a cash flow basis may misrepresent the true costs of resources used in MSW management. The basic principles of accrual accounting, together with a focus on the use of economic resources, are incorporated into the approach to FCA used in this workbook. Because accrual accounting recognizes the full costs of all resources used or committed in support of MSW operations, FCA can be used to measure more accurately the full cost of MSW management.

The difference between “outlays” and “costs” is fundamental to FCA. This handbook defines “cost” as the dollar value of resources used for MSW management. An “outlay,” on the other hand, is defined as an expenditure of cash made to acquire or use a resource. For example, outlays for construction and permitting of a landfill are made before its active life while outlays for closure and long-term care are made after its active life. However, the costs of construction, permitting, and closure and long-term care of a landfill should be recognized over the operating life of the landfill. All past or future outlays made to establish and maintain landfill operations should be recognized during the operating life of the facility. How outlays are converted to costs depends on whether they are “routine cash outlays,” “capital outlays,” or “future outlays.”

7.1 ROUTINE CASH OUTLAYS

Many “routine cash outlays” for MSW activities are equivalent to the “operating costs” of those activities. Operating costs represent the costs incurred to acquire resources that are used over a relatively short period of time (generally, less than one year) and routinely required to support ongoing operations. Examples of operating costs include outlays for wages and benefits, maintenance of

buildings and vehicles, and rent and lease payments.[3] Cash outlays made to obtain such resources may be made biweekly or monthly, and those items tend to be "used up" over that same period of time.

7.2 CAPITAL OUTLAYS

A "capital outlay" is an outlay of cash made to acquire a resource that will be used in MSW operations for more than one year. Examples of capital outlays for MSW management include the purchase price of collection vehicles and other equipment, as well as cash outlays made for the siting and construction of MSW facilities, such as landfills or transfer stations.[4] Cash flow accounting would require that local governments record the cost of capital outlays only in the year that the resources were acquired, thereby overstating the cost of MSW services for that particular year and understating costs for subsequent years.

The established accounting technique of "depreciation" can be used to convert capital outlays into annual costs. Depreciation is a method of allocating the costs of capital outlays over the useful life of the resource acquired. A simple "straight-line" method of depreciation may be used to calculate costs of depreciation by dividing the acquisition cost of the resource by the number of years for which the resource is expected to provide services. For example, a collection truck that costs $150,000 and has a useful life of 10 years would have an annual depreciation cost of one-tenth of its total capital cost, or $15,000. Examples of costs that local governments should depreciate include the costs of equipment, vehicles, and structures owned by the local government, costs incurred for the permitting and construction of MSW facilities, and costs incurred for the acquisition of landfill property.[5] Local governments should recognize annually the cost of depreciation for all such assets until they are fully depreciated. No depreciation expense, however, should be recorded for assets that have remained in service after their estimated useful life has ended.

7.3 FUTURE OUTLAYS

A future outlay is an anticipated expenditure of cash in the future that is obligated by current or prior activities. For example, the obligation to perform closure and long-term care is triggered when landfill operations begin. In addition, postemployment employee retirement benefits, such as payments for pensions or health care, are future outlays that may be obligated by the present employment of MSW personnel.[6] Again, cash flow accounting would require that local governments record such outlays

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[3] Appendix B of this workbook presents a list of items to be considered when compiling costs of wages and benefits as **Check List 1, Costs of Wages and Benefits**. Appendix B also presents a list of items to be considered when compiling costs of general operations and maintenance as **Check List 2, Costs of General Operations and Maintenance**.

[4] Appendix B presents a list of items to be considered when compiling costs of depreciation of capital outlays as **Check List 3, Costs of Depreciation of Capital Outlays**.

[5] In general, capital outlays for land are not depreciated. However, land acquired for use as a landfill has a finite useful life (capacity) and therefore should be depreciated.

[6] Appendix B presents a list of items to be considered when compiling costs of amortization of future outlays as **Check List 4, Costs of Amortization of Future Outlays**.

only in the year that the payments are made, thereby overstating the cost of MSW services during that particular year and understating costs during prior years.

The established accounting technique of "amortization" can be used to convert future outlays into annual costs. Amortization is a method of determining the annual costs associated with obligations for future outlays. In general usage, "amortization" refers to any process of liquidating, or allocating, a debt over time, as in the amortization schedule for a mortgage. Thus, the amortization of future outlays for closure and long-term care of a landfill recognizes the costs of those future obligations during the active life of the facility. Section 9.4 of this workbook presents a detailed method of amortizing such future outlays.

8.0 GETTING STARTED

Local governments must take four basic steps to calculate accurately the full cost of MSW services and programs:

- **STEP 1** - The local government must identify all the **direct** costs associated with providing MSW services.

- **STEP 2** - The local government must identify all the **indirect** costs associated with providing MSW services.

- **STEP 3** - Using its financial records, the local government must assign directly or allocate the costs of MSW management (identified in Steps 1 and 2 above) to its various solid waste **programs** (for example, collection[7], recycling, and disposal program areas).

- **STEP 4** - The local government must allocate the program costs identified in Step 3 between the two solid waste **customer classes** recognized in this workbook, residential and nonresidential.[8]

This workbook provides the forms necessary to complete each of the four basic steps. Once a local government has completed the four steps, it then can identify the cost of each solid waste program, as well as the cost per ton or per customer served.

Depending on how a local government accounts for the costs of solid waste management, it might not be necessary to complete all four steps. Because the financial structure of each local government is unique, each should review the entire workbook to determine which forms to use in calculating the full cost of its solid waste management activities.

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[7] For this workbook, the operation of transfer stations is considered an activity under the collection program area.

[8] Step four is necessary only when the local government provides MSW services to both residential and nonresidential customers.

9.0 HOW TO USE THE FORMS

The forms in this workbook are designed to accommodate various accounting and financial recordkeeping practices used by local governments in Florida. Each local government should determine which forms are needed to calculate the full cost of the MSW services it provides. If it so desires, a local government also may modify the forms provided or create custom forms to meet the specific needs and circumstances of its MSW program. In addition to the forms, five check lists are provided in Appendix B that may be used by local governments to identify the types of costs that might be included in the calculation of the full cost of MSW operations.

Local governments can use **Forms 1 through 4** to calculate specific types of **direct** costs that are incurred for MSW management operations and to allocate those costs among major program areas. **Form 5** provides a methodology for estimating the **indirect** costs incurred to provide support services to a MSW program and allocating those costs among program areas. Costs tallied on **Forms 1 through 5** are carried to **Summary Form A**. On **Summary Form A**, costs are totaled to calculate the full costs incurred for each solid waste program area and for the MSW program as a whole. On the lower portion of **Summary Form A**, a local government also can enter the value of any non-fee-based revenues that offset costs for its MSW program. For greater accuracy, non-fee-based revenues also should be allocated among MSW program areas. Total non-fee-based revenues are subtracted from total costs to derive the total "net" cost for each program area and for the MSW program as a whole. Total net cost, when compared with streams of fee-based revenues, can be used to identify potential disparities between MSW user fees and rate structures and actual costs.

After the local government identifies total costs for each program area, the costs then can be allocated further by customer class. Depending on the types of MSW programs offered, as well as the classes of customers served, local governments will or will not complete this step. The local government need not allocate costs by customer class unless it offers MSW services to both residential and nonresidential customers. **Summary Form B** is used to allocate costs by customer class.

To conduct a more detailed analysis of "bottom-line" FCA data, a local government also may calculate unit costs for its MSW programs. For services provided to residential customers, the local government is asked to break down costs for each program area into 1) cost per ton and 2) cost per household. For services provided to nonresidential customers, the local government is asked to break down costs for each program area into 1) cost per ton and 2) cost per customer.[9] **Summary Form C** is used to derive unit costs for providing MSW services to both residential and nonresidential customers. Unlike **Summary Form B**, however, **Summary Form C** should be completed even if a local government provides MSW services only to one class of customers.

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[9] In many business categories, the generation of solid waste may vary greatly from one nonresidential customer to the next. Therefore, for some local governments, "cost-per-customer" data may not provide precise indications of the overall expense of solid waste management services provided to nonresidential customers, compared with the cost of those provided to residential customers. In addition to cost-per-customer data, therefore, local governments are encouraged to include in their analyses of nonresidential costs alternative cost bases, such as cost per heated square foot or cost per container dump, if such data are available.

To help clarify the layout of this workbook and to demonstrate how the forms work together, Figure 1 provides a flow chart that shows the purposes of the five data collection forms and the three summary forms. Specific instructions for completing **Forms 1 through 5** are provided in Sections 9.1 through 9.5 of this workbook, respectively.

9.1 FORM 1 - WAGES AND BENEFITS

Form 1 summarizes, in detail, the annual costs to the MSW program of direct labor and employee benefits. Once annual costs of wages and benefits have been calculated, those costs can be allocated to the local government's various solid waste programs. This form captures the costs of wages and benefits for only those employees who work directly for the solid waste department. Using **Form 1**, the local government can track the costs of wages and benefits for both full- and part-time employees. However, **Form 1** is not meant to be used to capture the wages and benefits of personnel, such as the city manager, who do not work directly for the MSW program. Those salaries, or portions thereof, are captured on the indirect costs form (**Form 5**). Appendix B provides a list of items to be considered when compiling costs of wages and benefits as **Check List 1, Costs of Wages and Benefits**.

Data entered on **Form 1, Page 1 of 2**, for each employee include:

- Employee name
- Total annual wages
- Total annual benefits[10]
- Total annual postemployment benefits[11]
- Total annual wages and benefits

Once the information has been entered, the local government can use **Form 1, Page 2 of 2** to allocate among MSW program areas the total annual costs of wages and benefits for each employee. Costs of wages and benefits may be allocated among MSW programs by determining the amount of time spent by each employee who performs tasks for each program area. For example, if a MSW employee works only at a municipal solid waste landfill (MSWLF), 100 percent of costs for wages and benefits for that employee probably can be allocated to the disposal program area. If, however, an MSW employee regularly works three days per week collecting residential waste, one day per week transporting recyclable materials, and one day per week collecting materials for composting, total costs for wages and benefits for that employee might be allocated 60 percent to the collection program area, 20 percent to recycling, and 20 percent to composting.

It may be more difficult to allocate among the program areas costs for wages and benefits for employees who work exclusively for the MSW program but perform general support tasks that benefit

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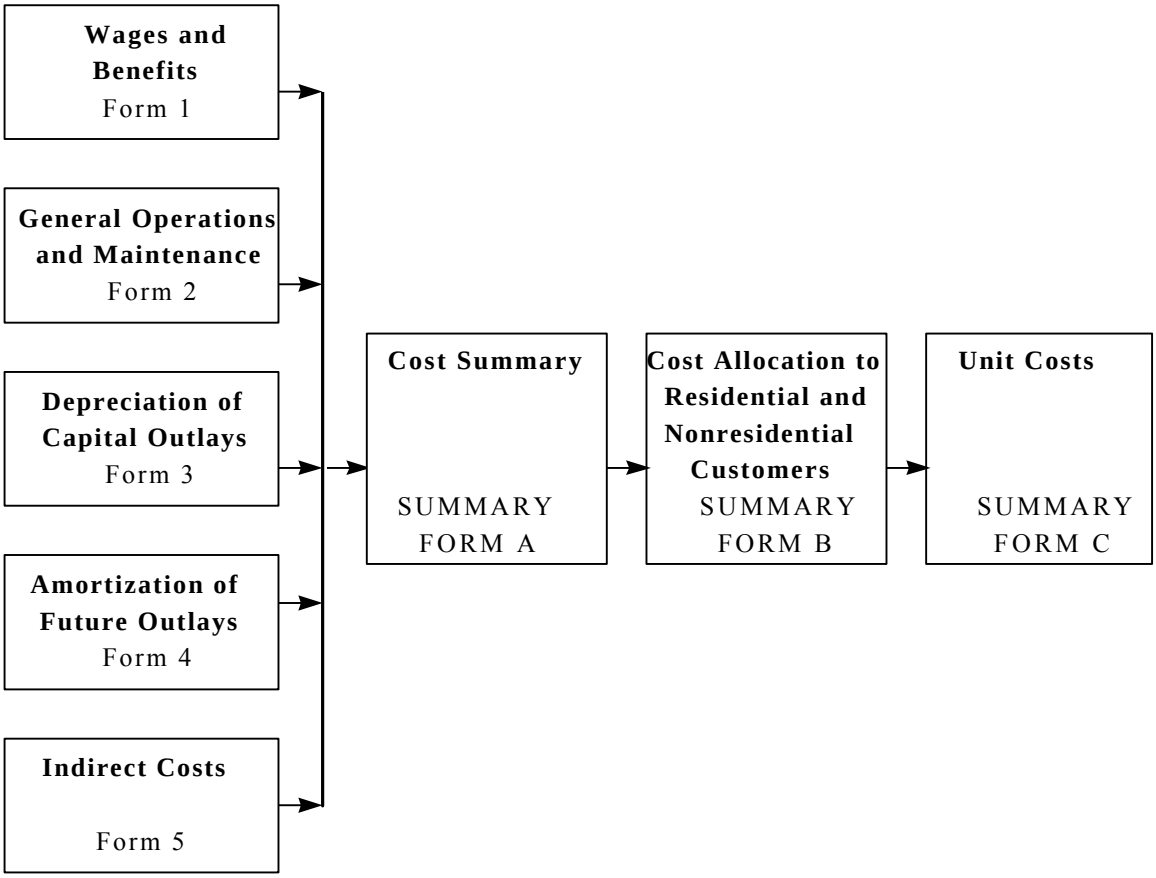
[10] Includes current payments for retirement benefits for current employees such as matching contributions made by an employer into its employees' 401K plans.

[11] This category is included to capture any current expenditures, such as payments for pensions or postemployment health and retirement benefits, made by the MSW program for the benefit of former MSW employees or their families. Such costs are distinct from payments into retirement plans made by the local government during the active career of the employee.

FIGURE 1

FCA DATA COLLECTION FLOW CHART



each program area. For example, the director of a local government's MSW program may perform a variety of executive and administrative tasks that cannot be assigned easily to specific program areas. If such employees track their time spent each day by task, it may be possible to allocate directly to specific program areas costs for wages and benefits for those employees. If, however, employees do not record their time by task, allocation of those costs might be based on the percentage of employees assigned to work exclusively for each program area. For example, if, of 100 directly assignable MSW employees, 50 work exclusively for the collection program area, and costs of $20,000 for wages and benefits for other employees cannot be assigned directly, 50 percent, or $10,000, of those costs can be allocated to the collection program area.[12]

Annual costs for wages and benefits for each program area, and for the MSW program as a whole, are totaled at the bottom of **Form 1, Page 2 of 2** and entered on the **Wages and Benefits** line on the cost summary (**Summary Form A, Line 1**).

9.2 FORM 2 - GENERAL OPERATIONS AND MAINTENANCE

Form 2 is used to compile the costs of general operations and maintenance (O&M) for a local government's MSW operations, other than those for wages and benefits for MSW personnel (those costs are accounted for on **Form 1**). Costs for O&M represent the costs incurred to acquire assets or resources that are used over a relatively short period of time (generally, less than one year) and are required routinely to support ongoing operations. Appendix B provides a list of items to be considered when compiling costs of general operations and maintenance as **Check List 2, Costs of General Operations and Maintenance**. Costs incurred for the purchase of capital goods, such as vehicles, equipment, and buildings; cash outlays made for repayment of principal on debt obligations that were secured for the purchase of capital goods [13]; and payments made for up-front expenses for the siting and construction of MSW facilities should not be included on **Form 2**. Rather, local governments should use **Form 3** to calculate the annual cost of depreciation of such capital resources over their anticipated useful lives.

Using **Form 2**, costs for general O&M can be allocated to different MSW program areas, according to how those funds are spent. Costs of operating expenses for vehicles and equipment can be allocated among MSW program areas by determining the amount of time the vehicle or piece of equipment is used to perform tasks for each program area. For example, 100 percent of operating expense for a

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[12] The various methods presented in this workbook for allocating costs across MSW program areas are offered as suggestions and are not meant to exclude alternative methods of allocating costs that the user may devise. Local governments, of course, may use a variety of methods for allocating costs to accommodate their particular needs and circumstances.

[13] Under an accrual system of accounting, depreciation, rather than annual outlays made for repayment of principal on debt obligations, is used to determine the annual cost of capital goods that were purchased by issuing long-term debt. In this scenario, only expense for interest is recognized as a cost of general O&M. If, however, long-term debt is secured to purchase noncapital goods or services, such as land that is acquired for uses other than as a landfill, annual outlays for the repayment of principal on such debt obligations are recognized as costs of general O&M.

bulldozer used only at a MSWLF can be allocated to the disposal program area. A multipurpose vehicle, however, such as a dump truck, might be used regularly three days per week to transport compost materials and two days per week to collect newspapers for recycling. In such a case, 60 percent of operating costs for that vehicle can be allocated to the composting program area and 40 percent to programs for the recycling of consumer products.

In the case of interest expense, costs of interest may be allocated among program areas by using information in the debt instrument to determine what percentage of the borrowed assets were used by each program area. If, for example, debt was issued exclusively to finance the construction of a waste-to-energy facility, 100 percent of the interest expense to service that debt can be allocated to the waste-to-energy program area. If debt was assumed to purchase a variety of goods and services, however, it may be more difficult to assign interest expense to specific program areas. One approach might be to base allocation of such costs on how the proceeds of the debt were spent. If, for example, $2 million of a total debt of $10 million was used to finance the construction of a recycling center, and total annual interest expense for that debt is $400,000, 20 percent of annual interest expense (or $80,000) can be allocated to the recycling program area.

There also may be some costs for general O&M that are accounted for on a government-wide basis that may be difficult to allocate among the different MSW program areas. For example, costs may be incurred annually for access to and use of a government-wide computer network. If the network is used by a number of different MSW program areas (for example, collection, disposal, and recycling), such costs should be allocated equitably among the program areas that use the network. If, however, there is no clear rationale for distributing the burden of such expenditures, costs may be allocated according to a composite of the costs for general O&M that can be assigned directly to specific program areas. For example, if 50 percent of the directly assignable costs for O&M are allocated to the disposal program area, and the local government has $10,000 in costs for general O&M that cannot be assigned directly, 50 percent of those costs, or $5,000, also should be allocated to the disposal program area.

Data entered on **Form 2**, for each cost for general O&M include:

- Description of expenditure
- Total annual cost

Once the above information has been entered, the local government may allocate its costs for general O&M among program areas, using any of the methods described above. Annual costs for general O&M for each program area, and for the MSW program as a whole, are totaled at the bottom of **Form 2**. Totals then are entered on the **General O&M** line of the cost summary (**Summary Form A, Line 2**).

9.3 FORM 3 - DEPRECIATION OF CAPITAL OUTLAYS

A "capital outlay" is an outlay of cash made to acquire a resource that will be used in MSW operations for more than one year. **Form 3** may be used to account for the annual costs of depreciation for all capital outlays that are made by a local government for its MSW program. Appendix B presents a list of items to be considered when compiling costs of depreciation of capital outlays as **Check List 3, Costs of Depreciation of Capital Outlays**.

The established accounting technique of "depreciation" can be used to convert capital outlays into annual costs. Depreciation is a method of allocating the costs of capital outlays over the useful life of the resource, which is the period of time during which the resource is expected to provide services. A simple "straight-line" method of depreciation calculates depreciation costs by dividing the capital outlay, minus any anticipated salvage value, by the useful life of the resource acquired. For example, a collection truck that costs $160,000 with an anticipated salvage value of $10,000 and a useful life of 10 years would have an annual depreciation cost of one-tenth of its total adjusted capital cost, or $15,000 (($160,000 - $10,000) ÷10) = $15,000.

"Up-front" costs, which include cash outlays made during the planning, permitting, and construction of MSW facilities, should be included with other types of capital outlays and depreciated, using **Form 3**. Up-front costs may be substantial and may be incurred before or during the construction of a MSW facility. Under FCA, up-front costs can be depreciated evenly, on a straight-line basis, over the expected operating life of the facility, no matter how far in advance of actual operation of the facility they are incurred. For example, if total costs of predevelopment and construction of a landfill are $10 million, and the landfill is expected to last 20 years, the annual depreciation cost for that landfill would be one-twentieth of the total up-front cost, or $500,000.[14]

Up-front costs for development of new activities under MSW program areas, such as outlays for community education and program planning, also can be substantial. Such expenses should be "capitalized" (treated as capital outlays) and depreciated over the period of time the activity will be in effect or some other reasonable estimate of the useful life of the activity. The continuing expenses of operating and maintaining such activities should be recorded as operating costs (**Form 2**).

Buildings, vehicles, equipment, and other capital goods that are owned by the local government should be depreciated over their remaining useful lives. If the purchases were financed, interest payments should be recognized as operating costs (**Form 2**). Buildings, equipment, and vehicles that are leased, not owned, generally should not be depreciated.[15] However, lease payments should be recorded as operating costs (**Form 2**). In general, capital outlays for land are not depreciated. However, land acquired for use as a landfill has a finite useful life (capacity) and therefore should be depreciated. Local governments should recognize annually the cost of depreciation for all capital outlays until they

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[14] One alternative to setting fixed schedules for depreciation of the "up-front" costs of landfills is to depreciate those costs as the capacity of the landfill is actually used. This method, which may provide a more accurate accounting of depreciation expenses for such an asset, also may be more complicated to use than the straight-line method of depreciation described above.

[15] Outlays for leases usually are treated as operating costs and are not depreciated. However, situations could arise in which the depreciation of leased assets is deemed appropriate. For example, when a multiple-year lease is purchased for a one-time, up-front payment, it may be appropriate to depreciate the outlay proportionately over the life of the lease. Further, assets acquired by local governments through "capital lease" arrangements also may be depreciated on the basis of the total payments to be made by the local government over the life of the lease agreement, the expected useful life of the leased property, or other pertinent terms included in the lease agreement.

are fully depreciated. No depreciation expense, however, should be recorded for assets that have remained in service after their estimated useful life has ended.

Local governments that are implementing FCA for the first time may wish to review accounts from prior years to determine which outlays were made to acquire resources that are still in service and to calculate the depreciation expense associated with those resources. If information about outlays for a particular resource cannot be found, such an outlay can be estimated based on the known prices of comparable items at the time when the resource likely was purchased. Another approach might be to determine the current market value of the resource and estimate its remaining useful life; an appraisal might provide a sound basis for determining the current market value of a particular asset.

Data entered on **Form 3, Page 1 of 2**, include:

- Description of capital outlay
- Purchase amount (minus any anticipated salvage, or residual, value)
- Anticipated useful life of asset (in years)

Once the information identified above has been entered, annual depreciation expense for each capital outlay is then transferred to **Form 3, Page 2 of 2**, which can be used to allocate those costs among program areas. Allocations of depreciation expense among program areas can be based on the manner in which a local government's capital assets are used. For example, 100 percent of the annual cost of depreciation for a bulldozer used only at a MSWLF can be allocated to the disposal program area.

On occasion, however, a local government's capital resources may be used in more than one program area. For example, it may be necessary to allocate depreciation expense for up-front costs for a MSW facility that serves both as a landfill and a recycling center for consumer products to both the collection and the recycling program areas. If account information is insufficient to support a determination of which aspect of the facility's operations correspond to specific capital outlays (and thus depreciation expense), volumetric criteria might be used in allocating such costs. Assume, for example, that the facility handles 1,000 tons of MSW per day; 800 tons is landfilled and 200 tons is processed through the recycling center. Assume also that annual depreciation expense for the facility is $100,000. Therefore, annual depreciation expense can be allocated 80 percent (or $80,000) to the disposal program area and 20 percent (or $20,000) to the recycling program area.

Annual depreciation expense for each program area, and for the MSW program as a whole, are totaled at the bottom of **Form 3, Page 2 of 2**. The totals then are entered on the **Depreciation of Capital Outlays** line of the cost summary (**Summary Form A, Line 3**).

9.4 FORM 4 - AMORTIZATION OF FUTURE OUTLAYS

A "future outlay" is an expenditure of cash in the future that is obligated by current or prior activities. For example, the obligation to perform closure and long-term care is triggered when landfill operations begin. In addition, postemployment employee benefits, such as payments for health care or pensions,

are future outlays that may be obligated by the present employment of MSW personnel. [16] The established accounting technique of "amortization" can be used to convert future outlays into costs. Amortization is a method of determining the annual costs of obligations for future outlays. In general usage, "amortization" refers to any process of liquidating, or allocating, a debt over time, as in the amortization schedule for a mortgage. Thus, the amortization of future outlays for closure and long-term care of a landfill recognizes the costs of those future obligations during the active life of the facility.

Of special concern for some local governments is the recognition of the future costs of closure and long-term care of MSWLFs. Because of the implementation of regulations under subtitle D of the Resource Conservation and Recovery Act (RCRA),[17] costs of closure and long-term care have become a more significant portion of the total costs incurred in operating MSWLFs.[18] Although cash outlays for closure and long-term care may not be made for many years, it is crucial that local governments adjust their revenue streams while the facility is open to capture the funds needed to cover such future costs. By incorporating the costs of future obligations into current rate structures, local governments will be able to ensure that sufficient funds will be available to conduct such activities when it becomes necessary to do so.[19]

One method of calculating the annual cost of amortization for a future outlay is expressed in the following equation:

$$\frac{\text{Current Estimated Cost of Future Outlay - Amounts Previously Amortized}}{\text{Expected Number of Years Until Funds Will Be Required}}$$

The simplified example below demonstrates how this amount can be calculated each year:

Assume that a local government's costs for closure of a single cell are estimated at $600,000 and that the cell is scheduled to close after three years of operation. During the first year, $200,000 must be recovered from existing revenue streams and set aside to pay for the costs of closure ($600,000 ÷ 3

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16 Appendix B presents a list of items to be considered when compiling costs of amortization of future outlays as **Check List 4, Costs of Amortization of Future Outlays**.

17 Regulations promulgated under subtitle D of RCRA are set forth in 40 Code of Federal Regulations (CFR) Part 258.

18 Cost estimates for closure and long-term care should be prepared in conformance with guidelines specified in Statement No. 18 of the Governmental Accounting Standards Board (GASB), *Accounting for Municipal Solid Waste Landfill Closure and Post-Closure Care Costs*. For more detailed guidance on the development of cost estimates for closure or long-term care for landfills, see *Evaluating Cost Estimates for Closure and Post-Closure Care of RCRA Hazardous Waste Management Units*, 1996, U.S. Environmental Protection Agency, Atlanta, Georgia.

19 Although regulations under subtitle D of RCRA governing closure and long-term care apply only to MSWLFs, outlays anticipated for decommissioning of other types of MSW facilities also should be estimated and amortized as a good management practice.

years = $200,000). Assume that, in the second year, estimated costs for closure increase by 3 percent. [20] In the second year, the current cost estimate for closure is $618,000 ($600,000 x 1.03 = $618,000). The local government therefore must recover $209,000 in the second year and set those funds aside to pay for the costs of closure ([$618,000 - $200,000] ÷ 2 years = $209,000). Assuming that, in the third and final year of operations, costs for closure increase again by 3 percent, [20] the current cost estimate for closure is $636,540 ($618,000 x 1.03 = $636,540). During the third year, therefore, the local government must recover $227,540 and set that amount aside to pay for the costs of closure ([$636,540 - $409,000] ÷ 1 year = $227,540).[21]

Annual costs of amortization of long-term care are calculated in essentially the same manner as costs of closure. However, such costs typically must be amortized over the operating life of the entire landfill facility, rather than over the life of a single cell.

Data entered on **Form 4, Page 1 of 2**, include:

- Description of future outlay
- Estimated cost of future outlay (in current-year dollars)[22]
- Amounts previously amortized
- Expected number of years until funds will be required

Once the information identified above has been entered, annual costs of amortization for each future outlay are transferred to **Form 4, Page 2 of 2**, which the local government can use to allocate those costs among program areas. Allocations of amortization among program areas can be based on the nature of the local government's future outlays. For example, 100 percent of the annual cost of amortization for closure and long-term care for the local government's MSWLF can be allocated to the disposal program area.

It may be necessary, however, to allocate annual costs of amortization for other types of future outlays over several MSW program areas. For example, assume: 1) the current estimated cost of total future outlays for postemployment benefits for 20 MSW employees is $100,000; 2) none of that amount has

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[20] Because of the effects of inflation.

[21] Under certain circumstances, the method prescribed in this workbook for amortizing future outlays may overstate the current cost of operating solid waste management facilities by applying "unfunded" or "underfunded" liabilities accrued in previous years to the present year's operations. For example, when estimated costs for closure and long-term care increase substantially late in the operating life of a landfill, the annual cost of amortization for future outlays at that landfill may appear to be higher at the later stages of its development than in previous years. Local governments that use this method should be aware of the potential effects of changes in cost estimates on the annual cost of amortization at their solid waste management facilities and should account for those effects when performing or presenting analyses of FCA data.

[22] "Current-year dollars" reflects the amount of funds that would be required to perform in the current year activities that are planned for the future.

been amortized; and 3) the funds will be needed in 10 years. By using the amortization method described above, we can determine that the cost of amortization for the current year is $10,000 ($100,000 - $0 divided by 10 years = $10,000 per year). Assume further that 10 of the 20 employees work in the solid waste collection program area, eight work at a MSWLF, and two work at a composting facility. Therefore, 50 percent of the annual cost of amortization (or $5,000) can be allocated to the collection program, 40 percent of that cost (or $4,000) can be allocated to the disposal program, and 10 percent of that cost (or $1,000) can be allocated to the composting program.

Annual costs of amortization for each program area, and for the MSW program as a whole, are totaled at the bottom of **Form 4, Page 2 of 2**. Those totals then are entered on the **Amortization of Future Outlays** line of the cost summary (**Summary Form A, Line 4**).

9.5 FORM 5 - INDIRECT COSTS

Indirect costs represent the costs of essential services provided to the MSW program by other departments or agencies of the local government, as well as costs incurred by other government entities for general administration and executive oversight.[23] Although the MSW program does not budget for them, such indirect costs are nonetheless costs incurred by the local government to provide MSW services. Such costs therefore must be identified to determine the full cost to the local government of solid waste management operations.

There are several accepted methods of allocating indirect costs. One relatively simple method is prescribed for use with this workbook. Local governments are free, however, to use any number of alternative methods, provided that those methods identify accurately the indirect costs incurred for providing support services for solid waste management programs in their communities. Examples of other methods that may be used to allocate indirect costs can be found in *Full Cost Accounting for Municipal Solid Waste Management: A Handbook*, U.S. Environmental Protection Agency, Office of Solid Waste, October 1995.

The method of allocating indirect costs that is prescribed in this workbook requires that the local government first calculate the ratio of its MSW employees to its total employees. Second, the local government must list the total budgets for each individual, group, or department that provides support services to the MSW program. The total budget for each individual, group, or department then is multiplied by the ratio of MSW employees to total employees. By following the methodology, the local government can estimate the total amount of indirect costs incurred by each individual, group, or department to provide support services to the MSW program. Subsequent allocations of indirect costs can be derived by calculating the percentage of MSW employees who are associated with each solid waste program area.

Data entered on **Form 5, Page 1 of 3** include:

- Total number of MSW employees
- Total number of local government employees

[23] Appendix B presents a list of items to be considered when compiling indirect costs of MSW programs as **Check List 5, Indirect Costs**.

- Ratio of MSW employees to the total number of local government employees

Data entered on **Form 5, Page 2 of 3** include:

- Total budget for each individual group or department that provides support services to the MSW program
- Ratio of MSW employees to the total number of local government employees (from **Form 5, Page 1 of 3**)
- Total indirect cost to MSW program

Data entered on **Form 5, Page 3 of 3** include:

- Number of MSW employees by program area
- Ratio of employees in the program area to the total number of MSW employees
- Total indirect costs to MSW program (from **Form 5, Page 2 of 3**)
- Indirect costs by program area

Indirect costs for each program area, and for the MSW program as a whole, are totaled on **Form 5, Page 3 of 3** and then are entered on the **Indirect Costs** line of the cost summary (**Summary Form A, Line 5**).

10.0 NON-FEE-BASED REVENUES

Sources of revenues that a local government's MSW program might realize, other than fee-based revenues,[24] are listed on **Summary Form A, Lines 8 through 12**. Such revenues include interest income, revenues generated from the sale of recyclables, revenues obtained from salvaging of equipment, and other miscellaneous sources of revenues including grants. Such non-fee-based revenues should be identified to calculate the net cost incurred by the local government to provide solid waste services. Once the net costs of the MSW program is known, the local government can determine the levels of fee-based revenues it must realize to recover the full cost of its program.

When non-fee-based revenues can be assigned directly to a specific solid waste program area, they should be recorded to offset only costs for that program area. For example, revenues realized from the sale of recyclables should be recorded to offset only costs of the recycling program area. Non-fee-based revenues that are not identified clearly with a particular solid waste program area should be allocated equitably among the various program areas.

11.0 ALLOCATING COSTS BY CUSTOMER CLASS

Many local governments provide solid waste services to more than one class of customer. Because the costs incurred to provide MSW services may vary by customer class, such a local government may wish to establish different rate structures for each customer class that it serves. Typically, the local government need not allocate costs for MSW services by customer class unless it provides such

[24] Fee-based revenues include revenues from tipping fees, user fees, taxes, other charges, and assessments.

services to both residential and nonresidential customers. The Cost Allocation to Residential and Nonresidential Customers Form (**Summary Form B**) allows the local government to determine the full cost of providing MSW services to both its residential and its nonresidential customers. [25]

The local government that provides solid waste services to both residential and nonresidential customers must devise an equitable method of allocating costs among MSW program areas and between the two customer classes. Methods of allocating costs by customer class include:

- Tons collected annually by program area by customer class as a percentage of total tons collected

- Number of employees by program area by customer class as a percentage of the total number of MSW employees

Each local government must determine for itself, according to its unique circumstances, the best method of allocating the costs of solid waste management between customer classes.

12.0 CALCULATING COSTS BY UNIT

To help conduct further analysis of "bottom-line" FCA data, local governments may calculate costs for MSW programs, using certain standard units of measure. Calculating costs by unit helps put the overall costs of solid waste programs in perspective and may facilitate useful comparisons among components of integrated solid waste management systems. Some local governments also may wish to use unit cost data to compare the costs and efficiencies of their MSW management services with the costs and efficiencies of services provided by other communities. Because, however, many factors can affect costs, care must be taken to ensure that any findings that are derived from such comparisons are justified. Methods of conducting such comparisons are beyond the scope of this document.

For services provided to residential customers, the local government is asked to break down costs for each program area into 1) cost per ton and 2) cost per household. For services provided to nonresidential customers, the local government is asked to break down costs for each program area into 1) cost per ton and 2) cost per customer. The Unit Costs Form (**Summary Form C**) allows the local government to derive unit costs for providing MSW services to both its residential and its nonresidential customers.

For this workbook, cost per ton is defined as the net cost of MSW management per year, divided by total tons processed. Data on cost per ton data may be used to compare more equitably similar MSW operations that are conducted by communities of different sizes and to evaluate bids or proposals from outside contractors for the performance of solid waste management services. For this workbook, cost per household is defined as the net cost of MSW management per year divided by the number of households served. Data on cost per household may be used to determine the amount of service fees and assessed taxes that must be collected, on average, from each household to pay the full cost of solid

[25] Costs by customer class for solid waste management services must be disclosed publicly, pursuant to Rule 62-708, Florida Administrative Code.

waste management services. To derive unit costs for nonresidential MSW services, the total number of customers served is substituted for the total number of households.

13.0 ANNUAL DISCLOSURES OF FCA DATA

Pursuant to Rule 62-708, Florida Administrative Code (FAC), all counties and municipalities in Florida are required to disclose annually, to the public and to DEP, the full cost of their solid waste management services. To the extent that different MSW services are provided, costs for collection, disposal, and recycling activities should be reported separately.[26] Further, costs for each activity should be allocated between residential and nonresidential customers. Disclosures of FCA data must be made within six months of the end of each fiscal year. DEP administers the implementation of the law and monitors the compliance of each local government in reporting the requisite information.

To disclose FCA data to the public, local governments annually must prepare a notice of public disclosure. A sample notice of public disclosure is presented in Appendix E of this workbook. The notice must report separately the costs of collection, disposal, and recycling activities, allocated between residential and nonresidential customers. A county or municipality can use one of the three following methods to disseminate the notice of public disclosure to its customers:

1) Mail a copy of the notice of public disclosure to each residential and nonresidential customer of solid waste management services that is located within the solid waste management service area of the county or municipality.

2) Enclose a copy of the notice of public disclosure in or with a bill sent to each res idential or nonresidential customer of solid waste management services that is located within the solid waste management service area of the county or municipality.

3) Publish a copy of the notice of public disclosure in a newspaper of general circulation within the county.[27]

In addition, all work papers, forms, and source documents used by the county or municipality in calculating the full cost of solid waste management services should be maintained on file for a period of three years. The file is to be available for examination by the public during normal business hours. Within 14 days of meeting requirements for disseminating the notice of public disclosure, each county or municipality also must submit to DEP a copy of the notice of public disclosure and a certification that is prepared using the format specified in FAC 17-708.500(3). A sample certification is presented in Appendix E of this workbook.

In reporting FCA data to DEP, counties and municipalities should submit to DEP copies of all of the forms and check lists from this manual that are used in calculating the full cost of solid waste management services. In the past, local governments in Florida have used a wide variety of methods

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[26] For this manual, landfilling and waste-to-energy programs are considered "disposal" and recycling of consumer products and composting are considered "recycling."

[27] Such notice shall be a display-type advertisement not less than one quarter page in size.

to calculate the full cost of MSW operations, making it difficult for DEP to properly process the resulting data. The use and submittal of the worksheets presented in this manual will help DEP to ensure that local governments in Florida use a standard methodology to calculate the full cost of solid waste management services, thus simplifying any further analysis that may be found necessary. Further, the use and submittal of the check lists presented in this manual will help DEP determine the types of costs local governments in Florida include in calculation of the full cost of MSW operations. Forms and check lists used by local governments in calculating FCA data should be submitted to DEP with a copy of the notice of public disclosure and the certification specified above.

All FCA materials should be sent to:

Florida Department of Environmental Protection
Full Cost Accounting Program
2600 Blair Stone Road
MS 4565
Tallahassee, FL 32399-2400

For more information about Florida's FCA program, please call (850) 245-8707.

APPENDIX A

FULL COST ACCOUNTING DATA COLLECTION FORMS

WAGES AND BENEFITS

YEAR: _____ ***FORM 1 - Page 1 of 2***

Employee Name	Total Annual Wages ($)	Total Annual Benefits ($)	Total Annual Post-employment Benefits ($)[a]	Total Annual Wages and Benefits ($)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
			TOTAL	

[a] Includes current expenditures made by local governments for the benefit of former MSW employees or their families. Such expenditures might include

WAGES AND BENEFITS

YEAR: _____ ***FORM 1 - Page 2 of 2***

Employee Name	Total Annual Wages and Benefits ($)	Allocation of Annual Wages and Benefits Expense by Employee by Program Area									
		Collection		Disposal				Recycling			
				Landfilling		Waste-to-Energy		Consumer Products		Composting	
		%	$	%	$	%	$	%	$	%	$
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											
TOTAL											

GENERAL OPERATIONS AND MAINTENANCE

YEAR: _____ ***FORM 2***

Description of Expenditure	Total Annual Cost ($)	Allocation of Costs of General Operations and Maintenance (O&M) by Program Area									
		Collection		Disposal				Recycling			
				Landfilling		Waste-to-Energy		Consumer Products		Composting	
		%	$	%	$	%	$	%	$	%	$
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											
13.											
14.											
15.											
TOTAL											

DEPRECIATION OF CAPITAL OUTLAYS

YEAR: _____ ***FORM 3 - Page 1 of 2***

Description of Capital Outlay	Purchase Amount[a] ($)	Anticipated Useful Life of Asset (Years)	Annual Depreciation Expense (Purchase Amount Divided by Anticipated Useful Life) ($)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
TOTAL			

[a] Minus any anticipated salvage, or residual, value.

DEPRECIATION OF CAPITAL OUTLAYS

YEAR: _____ ***FORM 3 - Page 2 of 2***

Annual Depreciation Expense ($)	Allocation of Depreciation Expense of Capital Outlays by Program Area									
	Collection		Disposal				Recycling			
			Landfilling		Waste-to-Energy		Consumer		Composting	
	%	$	%	$	%	$	%	$	%	$
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
TOTAL										

AMORTIZATION OF FUTURE OUTLAYS

YEAR: _____ ***FORM 4 - Page 1 of 2***

Description of Future Outlay	Estimated Cost of Future Outlay[a] ($)	Amounts Previously Amortized ($)	Expected Number of Years Until Funds Will Be Required	Annual Amortization Expense[b] ($)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
TOTAL				

[a] Expressed in current-year dollars.

[b] Current estimated cost of future outlay, minus amounts previously amortized, divided by the expected number of years until funds will be required.

AMORTIZATION OF FUTURE OUTLAYS

YEAR: _____

Annual Amortization Expense ($)	Allocation of Amortization Expense of Future Outlays by Program Area									
	Collection		Disposal				Recycling			
			Landfilling		Waste-to-Energy		Consumer Products		Composting	
	%	$	%	$	%	$	%	$	%	$
1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										
TOTAL										

INDIRECT COSTS

YEAR: _____ ***FORM 5 - Page 1 of 3***

1	**RATIO OF MSW EMPLOYEES TO TOTAL LOCAL GOVERNMENT EMPLOYEES**		
1.A	Total Number of MSW Employees		
1.B	Total Number of Local Government Employees		
1.C	**Ratio of MSW Employees to Total Local Government Employees (Divide line 1.A by line 1.B)**		

INDIRECT COSTS

YEAR: _____ ***FORM 5 - Page 2 of 3***

Support Service	Total Budget for Support Service ($)	Ratio of MSW Employees to Total Local Government Employees (Enter from line 1.C, Form 5 - Page 1 of 3)	Total Indirect Cost to MSW Program ($)
Accounting			
Administration			
Billing			
Budget Department			
Building Operations			
Clerical			
Clerk's Office			
Communications			
Contract Management			
Data Processing			
Insurance			
Legal			
Payroll			
Personnel			
Purchasing			
Records Management			
Other			
TOTAL INDIRECT COSTS			

INDIRECT COSTS

YEAR: _____ ***FORM 5 - Page 3 of 3***

Program Area		Number of MSW Employees by Program Area	Ratio of Employees in Program Area to Total MSW Employees	Total Indirect Costs (Carry over total from Form 5 - Page 2 of 3) ($)	Indirect Cost by Program Area ($)
Collection					
Disposal	Landfilling				
	Waste-to-Energy				
Recycling	Consumer Products				
	Composting				
TOTAL			100%		

COST SUMMARY

YEAR: _____ ***SUMMARY FORM A***

Costs						
Category	**Total Annual Cost to MSW Program ($)**	**Allocation of Costs by Program Area ($)**				
		Collection	**Disposal**		**Recycling**	
			Landfilling	**Waste-to-Energy**	**Consumer Products**	**Composting**
1. Wages and Benefits (Form 1)						
2. General O&M (Form 2)						
3. Depreciation of Capital Outlays (Form 3)						
4. Amortization of Future Outlays (Form 4)						
5. Indirect Costs (Form 5)						
6. Other Costs						
7. Total Costs (Add Lines 1 - 6)						

Revenues (Non-Fee-Based)						
Category	**Total Annual Revenues to MSW Program ($)**	**Allocation of Revenues by Program Area ($)**				
		Collection	**Disposal**		**Recycling**	
			Landfilling	**Waste-to-Energy**	**Consumer Products**	**Composting**
8. Interest Income						
9. Sale of Recyclables						
10. Salvage of Equipment						
11. Miscellaneous Revenue						
12. Total Revenues (Add Lines 8 - 12)						

Net Cost						
13. Total Net Cost (Subtract Line 12 from Line 7)						

COST ALLOCATION TO RESIDENTIAL AND NONRESIDENTIAL CUSTOMERS

YEAR: _____ ***SUMMARY FORM B***

MSW Program Area		Total Net Cost (Enter totals from Summary Form A, Line 13) ($)	Allocation of Costs by Customer Class by Program Area			
			Residential		Nonresidential	
			%	$	%	$
Collection						
Disposal	Landfilling					
	Waste-to-Energy					
Recycling	Consumer Products					
	Composting					
TOTAL						

UNIT COSTS

YEAR: _____ ***SUMMARY FORM C***

MSW Program Area		Costs by Unit by Customer Class by Program Area									
		Residential					Nonresidential				
		Total Residential Costs[a] ($)	Cost per Ton		Cost per Household		Total Nonresidential Costs [a] ($)	Cost per Ton		Cost per Customer[b]	
			Tons	$/Ton	Households	$/Household		Tons	$/Ton	Customers	$/Customer
Collection											
Disposal	Landfilling										
	Waste-to-Energy										
Recycling	Consumer Products										
	Composting										
TOTAL											

[a] Enter totals from Summary Form B.

[b] In many business categories, the generation of solid waste may vary greatly from one nonresidential customer to the next. Therefore, for some local governments, "cost-per-customer" data may not provide precise indications of the overall expense of solid waste management services provided to nonresidential customers, compared with the cost of those provided to residential customers. In addition to cost-per-customer data, therefore, local governments are encouraged to include in their analyses of non-residential costs alternative cost bases, such as cost per heated square foot or cost per container dump, if such data are available.

APPENDIX B

FULL COST ACCOUNTING CHECKLISTS

CHECK LIST 1
COSTS OF WAGES AND BENEFITS
(Page 1 of 1)

Check List 1 may be used to identify the types of costs of direct labor and employee benefits that may be associated with MSW operations. Items to be considered when compiling costs of wages and benefits might include:

Annual wages and salaries

- ❑ Annual wages and salaries for full and part-time MSW employees[1]

Annual benefits for full- and part-time MSW employees

- ❑ Medical, dental, and optical insurance
- ❑ Life insurance
- ❑ Workers' compensation insurance
- ❑ Unemployment compensation
- ❑ Bonuses and service awards
- ❑ Paid holidays
- ❑ Legal benefits
- ❑ Business travel and accident insurance
- ❑ Short- and long-term disability
- ❑ Health and dependent care reimbursement accounts
- ❑ Vacation and sick leave
- ❑ Tuition reimbursement or other employee education programs
- ❑ Matching contributions made to employee's 401K plans or to other retirement accounts
- ❑ Employee assistance programs
- ❑ Current expenditures for postemployment health and retirement benefits for former MSW employees or their families (such as pensions) that have not already been amortized[2]

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[1] Includes income taxes and Social Security contributions withheld.

[2] Estimated costs for postemployment benefits usually are treated as future outlays and amortized using Form 4 of this workbook. If, however, a local government is first attempting to implement FCA at a time when payments for postemployment benefits already are being made, such costs may be accounted for as operating expenses. In addition, differences between actual cash outlays for postemployment benefits and amounts amortized as future outlays in previous years should be accounted for as operating costs during the year in which the costs are incurred.

CHECK LIST 2
COSTS OF GENERAL OPERATIONS AND MAINTENANCE
(Page 1 of 2)

Check List 2 may be used to identify the types of costs of general operations and maintenance (O&M), other than those for wages and benefits for MSW employees,[1] that may be associated with MSW operations. Items to be considered when compiling costs of general O&M might include:

Vehicle and equipment operating expense

- ❑ Parts
- ❑ Supplies
- ❑ Fuel, oil, and tires
- ❑ Antifreeze and other fluids and lubricants
- ❑ Labor for maintenance and repair[2]
- ❑ Lease costs

Maintenance expenses for buildings and grounds

- ❑ Cleaning and upkeep
- ❑ Painting
- ❑ Minor repairs to structures
- ❑ Road repairs
- ❑ Maintenance of berms and earthwork
- ❑ Maintenance of groundwater monitoring system
- ❑ Maintenance of surface-water monitoring system
- ❑ Maintenance of landfill cap[3]
- ❑ General repairs and maintenance
- ❑ Litter control
- ❑ Landscaping

Payments for rent and leases[4]

- ❑ Rented or leased automobiles
- ❑ Rented or leased equipment
- ❑ Rented or leased office space
- ❑ Rented or leased furniture or office equipment
- ❑ Rented or leased buildings or structures

Payments for utilities

- ❑ Electricity
- ❑ Gas
- ❑ Water
- ❑ Sewer
- ❑ Telephone and facsimile

Purchases of noncapital goods[5]

- ❑ Office supplies
- ❑ Uniforms, hand tools, and other small items
- ❑ Computer software and small parts
- ❑ Fertilizer, grass seed, and other landscaping supplies
- ❑ Reference materials and periodicals
- ❑ Disposable field equipment
- ❑ Cover and fill material
- ❑ Clay, sand, gravel, and top soil
- ❑ Geotextiles and geomembranes

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1 Those costs are listed on Check List 1, Costs of Wages and Benefits.

2 Be certain such costs do not overlap with costs of wages and benefits accounted for on Form 1.

3 For closed facilities or closed portions of facilities.

4 Payments made under "capital" leases may not be treated as operating costs.

5 Noncapital goods are items than will be "used up" by the MSW program in one year or less.

6 Estimated costs of closure and long-term care usually are treated as future outlays and amortized, using Form 4 of this workbook. If, however, a local government is attempting to implement FCA when closure or long-term care activities already are underway, costs of such activities may be accounted for as operating expenses. In addition, differences between actual cash outlays for closure and long-term care and amounts amortized for such activities in previous years should be accounted for as operating costs during the year in which those costs are incurred.

CHECK LIST 2
COSTS OF GENERAL OPERATIONS AND MAINTENANCE
(Page 2 of 2)

Public participation programs

- ❑ Public advisory committees
- ❑ Advertising and communications
- ❑ Public education programs
- ❑ Public notices
- ❑ Public meetings
- ❑ Response to community concerns

Regulatory compliance costs

- ❑ Sampling and analysis of groundwater
- ❑ Licenses and permits
- ❑ Current-year expenses for closure or long-term care[6]
- ❑ Preparation of new or revised closure plans
- ❑ Current-year costs of corrective actions for known releases
- ❑ Demonstration of financial assurance[7]
- ❑ Leachate collection, treatment, and disposal
- ❑ Surface water collection, treatment, and disposal
- ❑ Fines and penalties
- ❑ Bird and animal control
- ❑ Implementation of full cost accounting program

Contracted services

- ❑ Consultant fees
- ❑ Services performed by vendors under contract
- ❑ Solicitation, evaluation, and award of contract bids

Other operational and administrative costs

- ❑ Insurance premiums[8]
- ❑ Travel
- ❑ Training and conferences
- ❑ Printing and publications
- ❑ Taxes paid[9]
- ❑ Legal defense
- ❑ Payments under legal settlements
- ❑ Interest
- ❑ Repayment of principal on debt obligations secured for the purchase of noncapital goods or services[10]
- ❑ Site security
- ❑ Shipping and freight

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[7] If future outlays for closure and long-term care are amortized correctly, cash outlays to trust funds to demonstrate financial assurance for those obligations should not be treated as operating costs. However, fees paid to trustees, or fees or premiums paid to secure other types of instruments, are treated as operating costs.

[8] Costs of insurance related to employee compensation are accounted for on Check List 1 - Costs of Wages and Benefits.

[9] Payments for taxes that are related to employee compensation are accounted for on Check List 1 - Costs of Wages and Benefits.

[10] For example, debt secured to purchase land for use within the MSW program but not as a landfill.

CHECK LIST 3
COSTS OF DEPRECIATION OF CAPITAL OUTLAYS
(Page 1 of 2)

Check List 3 may be used to identify the types of capital outlays that may be associated with MSW operations. Items to be considered when compiling costs of depreciation of capital outlays might include:

Owned vehicles and equipment

- ❑ Collection vehicles
- ❑ General purpose vehicles
- ❑ Bulldozers, backhoes, front-end loaders, scrapers, and other heavy rolling stock
- ❑ Furnishings and office equipment
- ❑ Computer systems and hardware
- ❑ Field equipment and tools[1]
- ❑ Waste compactors
- ❑ Scales
- ❑ Dumpsters, roll-off boxes, and other waste containers
- ❑ Drop-off containers for recyclables
- ❑ Residential recycling bins
- ❑ Sheepsfoot compactors and other compaction equipment
- ❑ Air classifiers, magnetic separators, and other recycling equipment
- ❑ Waste shredders, bailers, luggers, and other processing equipment

Owned structures

- ❑ Office buildings
- ❑ Maintenance buildings
- ❑ Composting sheds
- ❑ Storage buildings for recyclables
- ❑ Warehouses
- ❑ Incinerators and waste-to-energy plants

Facility predevelopment

- ❑ Site engineering and plans
- ❑ Reports to municipal council
- ❑ Site investigations
- ❑ Public hearings and consultation
- ❑ Feasibility and prefeasibility studies
- ❑ Predesign studies
- ❑ Land use planning and redistricting
- ❑ Land titles, transfers, and fees
- ❑ Permits
- ❑ Legal services
- ❑ Administrative services

Facility construction

- ❑ Land acquired for use as a landfill[2]
- ❑ Surveying and design
- ❑ Construction engineering
- ❑ Building construction and modification
- ❑ Scale facilities
- ❑ Furnishings and office supplies
- ❑ Earthwork and roads
- ❑ Utility extensions and connections
- ❑ Site grading and landscaping
- ❑ Liner and leachate management system
- ❑ Surface-water management system
- ❑ Groundwater monitoring system
- ❑ Gas venting and control
- ❑ Site security system

[1] Having an anticipated useful life of more than one year.

[2] In general, capital outlays for land are not depreciated. However, land acquired for use as a landfill has a finite useful life (capacity) and therefore should be depreciated.

CHECK LIST 3
COSTS OF DEPRECIATION OF CAPITAL OUTLAYS
(Page 2 of 2)

Up-front costs of development of new MSW programs

- ❑ Studies
- ❑ Program planning
- ❑ Community education

- ❑ Significant improvements, upgrades, or additions to existing structures, property, or equipment

CHECK LIST 4
COSTS OF AMORTIZATION OF FUTURE OUTLAYS
(Page 1 of 1)

Check List 4 may be used to identify the types of future outlays that may be associated with MSW operations. Items to be considered when compiling costs of amortization of future outlays might include:

Closure[1]

- ❑ Demolition and reclamation
- ❑ Clay liner
- ❑ Geomembrane
- ❑ Drainage layer
- ❑ Top soil
- ❑ Vegetative cover
- ❑ Asphalt cover[2]
- ❑ Survey plat
- ❑ Deed notation
- ❑ Landscaping
- ❑ Disconnection and abandonment of utilities
- ❑ Installation of monitoring wells
- ❑ Installation of leachate management facilities
- ❑ Gas recovery systems
- ❑ Inspection and certification of closure
- ❑ Closure or decommissioning of buildings, equipment, and MSW facilities other than landfills

Long-term care

- ❑ Site security
- ❑ Removal of leachate
- ❑ Maintenance of a vegetative cover
- ❑ Maintenance of the integrity of the final cover
- ❑ Operation of leachate collection and removal systems
- ❑ Maintenance and monitoring of leak detection system
- ❑ Maintenance and monitoring of groundwater monitoring system
- ❑ Prevention of erosion or damage to the final cover from run on or run off
- ❑ Protection and maintenance of surveyed benchmarks
- ❑ Deed notation
- ❑ Certification of post-closure care

Postemployment employee benefits

- ❑ Pensions
- ❑ Health care

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[1] Cost estimates for closure and long-term care should be prepared in conformance with guidelines sp ecified in Statement No. 18 of the Governmental Accounting Standards Board (GASB), *Accounting for Municipal Solid Waste Landfill Closure and Post-Closure Care Costs*. For more detailed guidance on the development of cost estimates for closure or long-term care for landfills, see *Evaluating Cost Estimates for Closure and Post-Closure Care of RCRA Hazardous Waste Management Units*, 1996, U.S. Environmental Protection Agency, Atlanta, Georgia.

[2] Sometimes used as an alternative to establishing a vegetative c over.

CHECK LIST 5
INDIRECT COSTS
(Page 1 of 1)

Check List 5 may be used to identify the types of indirect costs that may be associated with MSW operations. Indirect costs are costs incurred by a local government when other departments or agencies of that local government provide services to the MSW program. Items to be considered when compiling indirect costs might include:

Indirect costs

- ❑ Accounting
- ❑ Administration
- ❑ Billing
- ❑ Budget department
- ❑ Building operations
- ❑ Clerical
- ❑ Clerk's office
- ❑ Communications
- ❑ Contract management
- ❑ Data processing
- ❑ Legal
- ❑ Mayor's office, city council, or county commission (executive oversight)
- ❑ Payroll
- ❑ Personnel
- ❑ Public works
- ❑ Purchasing
- ❑ Records management

APPENDIX C

GLOSSARY OF FULL COST ACCOUNTING TERMS

APPENDIX C

GLOSSARY OF FULL COST ACCOUNTING TERMS

- **Account** - A financial record of cash movements, collecting specific types of outlays or inflows of financial resources.

- **Accounting basis** - An accounting concept that refers to the point at which expenditures, expenses, and related liabilities are recognized in accounts and reported in financial statements; the basis relates to timing under either the cash or the accrual method.

- **Accrual basis accounting** - A system of accounting that recognizes (accrues) costs as services are provided or as events and circumstances occur that have cash consequences, regardless of when cash outlays are made.

- **Amortization** - A method of determining the annual costs associated with obligations for future outlays (for example, the reduction of debt by regular payments sufficient to retire the debt obligation by maturity).

- **Assessed revenues** - Funds derived from taxes or fees assessed in a manner that is unrelated to the level of service provided, as when property taxes or flat fees are used to fund solid waste management activities.

- **Back-end costs** - A category of costs that includes expenditures required to properly complete operations and take proper care of landfills and other municipal solid waste (MSW) facilities at the end of and after their useful lives; this category of costs also may include expenditures for postemployment health and retirement benefits for former MSW workers.

- **By-product revenues** - Revenues generated from the sale of marketable products created as a by-product of solid waste management, such as recyclables, compost, energy from waste, and landfill gas.

- **Capital outlay** - An outlay made to acquire a resource that will be used in MSW operations for a period of more than one year. Capital outlays (past, present, and future) must be converted into annual costs for full cost accounting.

- **Cash flow accounting** - A system of accounting, also known as cash basis accounting or general fund accounting, under which cash payments are recorded as they are made to obtain goods and services.

- **Contingent costs** - A category of costs that may include: 1) costs for remediation of future releases of pollutants to the environment from MSW operations (for example, leaks from municipal landfills) and 2) costs of future liabilities that might be incurred to provide compensation to third parties for bodily injury or property damage that results in some way from MSW operations.

- **Cost** - The dollar value of resources used for MSW management.

- **Current-year dollars** - The amount of funds that would be required to perform in the current year activities that were performed in the past or planned for the future; also past or future costs adjusted for the effects of inflation.

- **Depreciation** - An accrual-based method of allocating the costs of capital outlays over the expected useful life of the resource acquired.

- **Direct costs** - Costs that are clearly and exclusively associated with solid waste management operations.

- **Enterprise funds** - Mechanisms used by local governments for activities that can be financed and operated like the activities of a private business.

- **Fixed costs** - A category of costs that includes interest, depreciation, and amortization for past or future capital outlays and other costs (for example, those of site security) that cannot be reduced quickly in response to decreased waste disposal tonnage.

- **Full cost accounting** - A systematic approach to identifying, summing, and reporting the full costs incurred in providing solid waste management services to communities.

- **Future outlay** - An anticipated future expenditure of cash that is obligated by current or prior MSW activities.

- **Generally accepted accounting principles (GAAP)** - The rules, procedures, and conventions that define accepted accounting principles at a given time; GAAP includes broad guidelines, as well as detailed procedures and practices; much of GAAP for state and local governments is issued in codified form by the Government Accounting Standards Board (GASB).

- **Government Accounting Standards Board (GASB)** - An independent body responsible for setting accounting standards for activities and transactions of state and local governments; GASB was established in 1984 to succeed the national Council on Governmental Accounting.

- **Hidden costs** - The costs of activities or resources that appear to be free but are not.

- **Indirect costs** - A category of costs that are incurred for support services provided by other local government entities. Indirect costs for solid waste management may include expenditures for support services provided to the MSW program by such individuals, groups, or departments of local governments as accounting, payroll, personnel, legal, purchasing, data processing, records management, and the mayor's office (executive oversight).

- **Integrated solid waste management systems** - Systems that incorporate several different approaches to or activities related to managing solid waste (for example, recycling, composting, and landfilling).

- **Modified accrual basis of accounting** - A system of accounting under which the accrual basis of accounting is modified to accommodate the focus of governments on the current flow of financial resources; under the system, costs are recognized when liabilities are incurred.

- **Net cost** - The full cost of a solid waste management activity minus its by-product revenues.

- **Net cost per household** - An indicator of the amount of service fees and assessed taxes that must be collected, on average, from each household to pay for the full costs of solid waste management, after taking into account any by-product revenues; net cost per household equals the net costs per year divided by total households served.

- **Net cost per ton** - A common denominator for comparing the current costs of solid waste management activities within or among local government jurisdictions; net cost per ton equals the net costs per year divided by total tons managed.

- **Operating costs** - Regularly recurring expenditures made to obtain resources for ongoing MSW operations; such resources are items used for a period of less than one year.

- **Outlay** - An expenditure of cash made to acquire or use a resource.

- **Overhead costs** - The management and support costs of running a MSW program.

- **Up-front costs** - The initial expenditures incurred to start an MSW activity.

APPENDIX D

SAMPLE NOTICE OF PUBLIC DISCLOSURE AND CERTIFICATION

SAMPLE NOTICE OF PUBLIC DISCLOSURE

Notice of Public Disclosure
of the Full Cost of Solid Waste Management
within the City/County of _____, Florida
for the Fiscal Year 19____ - ____
Pursuant to 62-708 Florida Administrative Code

RESIDENTIAL:

	Cost per Unit*
Collection:	$
Disposal:	$
Recycling:	$

NONRESIDENTIAL:

	Cost per Unit*
Collection:	$
Disposal:	$
Recycling:	$

*Please specify the method of reporting by unit (for example, cost per ton, household, or customer).

SAMPLE CERTIFICATION

The undersigned, duly authorized representative of (NAME OF LOCAL GOVERNMENT UNIT), HEREBY CERTIFY THAT:

The solid waste management full cost disclosure notice, a copy of which is attached, for the fiscal year ending _____, does not, to the best of my knowledge contain any untrue statements or calculations or fail to present any material facts which should be included for the purpose of properly informing the public of the full costs of solid waste management.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this ___ day of _____, 19___. (Use appropriate seal and title block for the chief financial officer of the local government.)