

AN INTRODUCTION TO FUNDING AND ACCOUNTING FOR INTEGRATED SOLID WASTE MANAGEMENT PLANNING

April 2017



TABLE OF CONTENTS

TABLE OF CONTENTS	2
INTRODUCTION.....	3
WAYS TO FUND SOLID WASTE MANAGEMENT	4
FULL COST ACCOUNTING EXPLAINED	14
ACCOUNTING TERMINOLOGY	19
GASB AND GAAP	23
REVIEW YOUR RECORDS.....	24
COMPILING FINANCIAL RECORDS	27
THE FCA Tool.....	36
APPENDICES.....	37
FCA WORKSHEET EXAMPLES.....	37

INTRODUCTION

Integrated Solid Waste Management (ISWM) is a comprehensive waste prevention, recycling, composting, and disposal system. An effective ISWM system considers how to prevent, recycle, and manage solid waste in ways that most effectively protect human health and the environment. The Introduction to Funding and Accounting handbook was published to assist local governments with analyzing the costs of the services that make up their solid waste system. The handbook can assist local government staff members in using full cost accounting (FCA) to identify, collect, track and analyze costs associated with solid waste services. The handbook is also designed to help communities transition to an integrated solid waste management (ISWM) system.

WHY ARE WE DOING THIS ANYWAY?

- To understand the costs of programs and be able to explain those costs to others
- To answer questions about the costs of solid waste and recycling
- To accurately price services for solid waste and recycling collection



WAYS TO FUND SOLID WASTE MANAGEMENT

Funding mechanisms for local government recycling programs vary from state to state based on the enabling legislation in each state, as well as the history and preferences of each local government. Some of the funding options available to local governments are described below.



Local Government Funding Tools

GENERAL FUND APPROPRIATION

The most straightforward funding mechanism is an appropriation from a local government's general fund. Using general fund dollars to support solid waste programs does not require action by voters; however, it is subject to review by elected officials, who may change the amount allocated in the next budget cycle. This can make general fund dollars a relatively unstable way to finance solid waste programs.

DISPOSAL SURCHARGES (TIPPING FEES)

Jurisdictions with a landfill have the option to impose a surcharge on disposed waste by the cubic yard or ton, commonly called a tipping fee. The landfill operator must collect the surcharge and pay it to the county for use in established solid waste and recycling programs, consistent with state legislation and rules. Counties with their own solid waste disposal facilities may charge a fee for the

use of those facilities, including the cost of running a recycling program. The amount and structure of the tipping fee and what the revenues are used for varies among states and by region of the United States.

INDEPENDENT COST SHARING

In some states, counties and local units can work together to operate recycling programs through intergovernmental agreements. Each local government can use its own method of raising funds to pay for its share of the program cost, consistent with state legislation and rules.

MATERIAL SALES REVENUES

Local governments can sell recycled materials and use the sales revenues to offset the costs for operating the program. These can include revenues paid by a Material Recovery Facility (MRF) or sales of yard waste that is processed into compost or mulch.

USER FEES

In many cases, local governments may charge fees to provide services. These are rates charged in exchange for the provision of a service, in this case, ISWM services. Unlike taxes, fees are only charged to those that use the service. Fees may be a flat rate, such as a fixed rate per household, or they may be variable, for example charging different rates depending on the quantity of waste disposed by a household. Systems of pricing ISWM services are known by a variety of names: variable rate, pay by the bag, variable-can rate, volume-based or pay as you throw, among others.

In the context of ISWM, fees used can include franchise or permit fees charged to haulers, permit fees for landfills or transfer stations, or user fees charged to residents for the use of convenience

centers or solid waste collection services. In Kentucky, counties can charge a licensing fee of up to two percent of gross receipts of a solid waste management facility owned or operated by a business.

User fees are a common way to fund solid waste programs. User fees can support an enterprise fund (See page 11 for a description of Enterprise Funds), although a local government does not have to operate an enterprise fund to charge user fees. A combination of user fees and tax revenues can support ISWM, whether or not an enterprise fund is used.

Typically, user fees are based on a household unit and are used to fund residential collection and disposal or recycling programs. Depending on state laws, user fees can fund convenience centers, recycling collection, solid waste collection and disposal, special waste disposal (like household hazardous wastes, yard waste and white goods), and even solid waste services such as education and enforcement. State law dictates if user fees can exceed the cost to provide the service.

In some localities, a private hauler collects solid waste and recycling. The private hauler may charge residents a user fee directly. In other places where a private hauler collects waste, the local government may collect the user fee and pass it on to the private hauler.

North Carolina local governments sometimes use availability fees to fund their programs. Availability fees differ from other user fees in that they are authorized specifically to allow a local government to fund the availability of a solid waste disposal facility. Because North Carolina local governments may use fee revenues to cover more than one type of service (such as collection of solid waste in addition to providing the availability of a landfill), the fees are not always called availability fees even when they are funding the availability of a solid waste disposal facility.

Permitting fees are a type of user fee charged by communities to permit private haulers or landfills. This fee could be a one-time fee, an annual fee or an occasional fee for permit renewals. States have different laws governing the types of permitting fees that are authorized.

BONDS

Bonds may be used to help fund larger purchases such as collection vehicles, landfills and transfer stations.

PUBLIC-PRIVATE PARTNERSHIPS

Local governments and private companies can work together to fund solid waste programs. For example, Athens-Clarke County Unified Government in Georgia has a public-private partnership with ReCommunity Recycling. The unified governments own the MRF where materials are sent, while ReCommunity operates it.

OTHERS

There are also less common ways to fund solid waste projects or programs. In Georgia, special purpose local option sales taxes have been used to fund capital projects, such as building a MRF. In Columbus, Georgia, county inmates work on collection vehicles.

In Kentucky, counties and waste management districts may create a 109 Board¹ that has the ability to levy a property tax to fund solid waste management programs. Some Kentucky counties have a

¹ http://www.e-archives.ky.gov/pubs/Natural/Waste/Resource_guide_on_109_districts.pdf

109 Board that provides solid waste management planning and decision making but does not levy taxes, while a few have 109 Boards that do tax and also handle all solid waste issues in the county.

State Funding Tools

TAXES

Some state governments charge a tax on materials or services associated with solid waste management and may provide some of that funding to local governments. State legislation authorizing such taxes varies by state.

GRANTS

Grants can also help local governments fund ISWM programs. While grants cannot provide all the funding necessary to keep ISWM programs operating on a daily basis, they can help local governments expand to provide new services or make large capital purchases more manageable. Grants can come from a number of sources, including state agencies, federal agencies or non-profit organizations such as the Closed Loop Fund or the Recycling Partnership.

As of 2016, the Region 4 states that offer recycling grants to local governments include Alabama, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee. Grant opportunities vary by state. Grants offered by the Recycling Partnership and the Closed Loop Fund are open to all states.

SPECIAL WASTE FEES

States may adopt legislation to attach fees to special types of wastes and then use the revenues from those fees to pay for properly disposing of the waste or for other purposes. For example, a state may charge a fee for disposing of tires or electronic waste.²

Many states charge a fee for the disposal of scrap tires. The revenue from these fees may be used for a variety of purposes, depending on state law. In Georgia, local governments and solid waste authorities can apply to the Local Government Scrap Tire Abatement Reimbursement Program³ for funding to cover the cost of transporting and processing scrap tires that have been removed from identified, state-listed dumps where the owner is either unknown or financially unable to clean up the tires or the local government has determined that the property owner is a victim of illegal dumping. Funds are also available to remove tires dumped on city or county right-of-ways and for scrap tire amnesty events sponsored by a local government. Applications are accepted on a rolling basis and awarded first come, first served, contingent on funding availability and demand. In Alabama, a portion of the scrap tire fee revenues goes to counties who use the funding to remediate roadside scrap tire piles and a marketing program to fund beneficial reuse projects. Not all states use the fees for dealing with tire waste.

Similarly, some states charge fees to help pay for the costs associated with disposing of electronic waste, primarily computers and televisions. The types of electronics vary, but may include computers,

² MDEQ, 2010.

³ http://epd.georgia.gov/sites/epd.georgia.gov/files/Reimbursement_Guidelines.pdf

monitors, printers and scanners. In California, the Electronic Waste Recycling Fee varies by size of the electronic waste, ranging from \$3 for items with screens between 4 and 15 inches, \$4 for items 15 to 35 inches, to \$5 for items 35 inches or larger. Consumers pay the fee at the retail point of sale.⁴ In other states, such as Indiana and North Carolina, fees are paid by manufacturers through an annual registration requirement.⁵ Another alternative funding source is unredeemed container deposit funds in states with container deposit legislation (CDL)⁶. California, Connecticut, Hawaii, Massachusetts, Maine, Michigan, and New York keep all or a portion of the unredeemed container deposits and can use those funds to support state or local recycling efforts. For example, in California, the state keeps about 20% of the over \$1.2 billion in container deposits to fund and support supplemental recycling programs⁷.

Enterprise Funds

Enterprise funds are independent, self-sustaining funds supported by user fees, dedicated taxes or dedicated property taxes to fund a local government's solid waste management programs. With an

⁴ CalRecycle. "Retainer Information & Electronic Waste Recycling Fee." April 9, 2015. Retrieved from:

<http://www.calrecycle.ca.gov/Electronics/Retailer/>.

⁵ N.C. Division of Waste Management. "North Carolina Electronics Management Program."

⁶ There are ten US states with deposit laws in place, none of which are located in EPA Region 4. The states are CA, CT, HI, IA, MA, ME, MI, NY, OR, VT.

⁷ <http://www.calrecycle.ca.gov/bevcontainer/>

enterprise fund system, revenues for solid waste programs are placed in a specific fund and committed to covering solid waste system costs. Enterprise funding has several advantages. It makes full cost accounting easier, because all of the costs of the program are managed in a separate account. This also allows for better information for tracking costs and revenues. The benefit of an enterprise fund is that by relying on user charges rather than taxes, the revenues are less likely to be reallocated to another government service. The intent of an enterprise fund is to ensure that the funds cannot be used to fill general fund needs and any funds that are left over at the end of the year stay within the enterprise fund. In addition, enterprise funds create a situation in which capital replacement and the cost of borrowing money are better accommodated. The ability to maintain this intent is based on the state enabling legislation under which the enterprise fund was created and the basis of the fee or tax that generates the funding.

There are also disadvantages to operating solid waste funding using an enterprise fund. User fees can have a larger impact on low-income families than a progressive property tax funded system. An enterprise fund also places a greater administrative burden on staff to manage the financing. Initiating user fees can also be unpopular with residents, especially if they expect solid waste services to be provided from general fund revenues.

SUBSIDIES TO THE ENTERPRISE FUND

Generally speaking, enterprise funds are self-sustaining. However, an enterprise fund may also be subsidized by the local government's general fund. Although some local governments rely entirely on user fees and other program revenues to fund ISWM enterprise funds, this option may not work for all local governments.

Subsidizing an enterprise fund using general fund dollars may be especially useful when the enterprise fund is just starting. Enterprise funds may need a few years to become established as independent budgeting units. Local governments may also choose to subsidize an enterprise fund to keep user fees low or while user fees are phased in over time.

FULL COST ACCOUNTING EXPLAINED

Full Cost Accounting (FCA) is a method of identifying and reporting the costs of providing ISWM services to communities. It is a tool that can help local governments identify the costs of different

ISWM programs and report those costs accurately.

It takes into account past and future expenditures, overhead and support services costs, and operating costs. FCA can help you make informed decisions related to ISWM services and help you communicate them to the public.

When solid waste services are paid for through the general fund, the cost of these services can be allocated to several different departments and are easy to overlook. FCA provides knowledge of what these costs are and control over managing them.

When citizens and elected officials have questions about the costs of operating ISWM programs, FCA can provide a complete picture of the cost to manage our waste streams, including collection, composting, recycling, landfilling and waste-to-energy.



BENEFITS OF USING FULL COST ACCOUNTING

- Identifies the costs of ISWM services
- Creates a planning tool for preparing budgets and for determining the future of ISWM services
- Exposes hidden costs to allow for a more accurate comparison of the various ISWM services
- Helps explain ISWM costs to the public

Because FCA provides data on the total costs of ISWM, it can also be used to compare the costs of different program options, consider changes to services, establish rates and user fees that are sufficient to recover the full costs of the services provided, and clarify the costs of recycling versus the costs of landfilling.

Using FCA within Enterprise Funds

An enterprise fund is a separate accounting and financial reporting mechanism for local government services that charge a fee or tax in exchange for goods and services. Public utilities, such as water and sewer services, are often accounted for as an enterprise fund. Enterprise funds allow the local government to determine the total cost of providing a service and to show the public which portion of that cost is paid for user fees, dedicated taxes or dedicated property taxes rather than by general fund taxes. Enterprise funds do not necessarily collect all costs through user fees and dedicated taxes; rather, they may be subsidized by general fund revenues.

Enterprise funds are used to account for governmental activities or services that are operated like a private business. The purpose for placing a governmental activity, such as an ISWM program, in an enterprise fund is to clearly identify the costs and revenues associated with that activity or set of services and to prevent those cost and revenue funds from being commingled with other expenditures in the general fund. Doing so equips managers to manage and monitor the financial performance of the program by segregating the costs and revenues, including capital costs, associated with the activity or set of services.

An important characteristic of enterprise funds is their dependence on fees and charges to support the operations, including dedicated tax revenue or dedicated property taxes for recycling and solid waste services. In establishing a solid waste enterprise fund it is essential that the fees and taxes are sufficient to support all costs, both operational and capital, incurred by the solid waste and recycling programs. By establishing user fees and taxes that recover all costs associated with the provided services, it is possible to track the relationship of revenues to expenditures of the solid waste and recycling services.

An enterprise fund approach to managing services also provides for a clearer and more efficient method for capital planning and expenditures. It provides two major advantages for accessing capital markets:

- 1) The ability to demonstrate a reliable revenue stream to fund integrated solid waste management activities and, therefore, debt service.
- 2) The ability to provide audited statements for all program activities.

Developing baseline "business as usual" forecasts going out five to ten years directly from an organization's budget line item format, using cost allocation to break out costs to all major cost centers (transfer, MRF, drop-off, curbside, commercial, etc.), provides an excellent tool for tracking and projecting financial performance. These forecasts document what financial and performance trends could emerge that may constrain operations and prevent achievement of goals during the forecast period.

Key assumptions are documented, often with guidance from reliable sources, such as human resources (e.g., health insurance/benefit escalator trends). Key metrics are identified and their baseline values established (costs per ton and costs per capita being just a few). This baseline

forecast is soundly grounded in past performance data, such as tons, sources, type of material and time period, as well as financial data such as program costs, comparison to budget and allocation of costs to programs/sector.

Over the years this budget forecast provides a sound foundation for decision making for both program managers and their administrative and elected decision makers, especially with regards to rate and fee setting, overhead cost allocation, restricted fund targets and for capital renewal/replacement. . It also becomes the baseline benchmark against which all proposed new program expansions and additions can then be measured. Once a baseline forecast is completed the foundation would then be established for:

- Annual operating budgeting in the context of longer-term financial trends and issues.
- Long term capital budgeting.
- Near-term capital and operating analysis of emerging projects such as:
 - MRF upgrade.
 - Rate setting for curbside contract renewal.
 - Rate setting for disposal fees.
 - Rate setting for recycling tipping/processing fees.

FCA and enterprise funds are complementary. Having FCA information in hand will allow local governments to feed information into budgets prepared for enterprise funds.

Using FCA with User Fees

A user fee is a charge for a service or access to a facility. Examples of user fees include water and sewer fees, highway tolls, parking charges and park entry fees. User fees should only cover the cost of providing the service received. Taxes differ from user fees in that the amount each taxpayer pays

are not directly tied to the services used, unless the tax is a dedicated tax for a specific, well defined purpose related to ISWM activities.

FCA can be used to help identify the cost of providing a service, which can then be used to identify a rate structure that will generate the necessary revenues to operate the service.

Accounting Methods

The cash basis and accrual basis of accounting are the two principal methods of keeping track of a business's income and expenses. They differ in terms of the timing of when transactions are credited or debited to accounts.

CASH BASIS OF ACCOUNTING

The cash basis of accounting does not recognize transactions until a check (or cash) is actually received and does not recognize expenses until they are actually paid. The advantage of the cash basis of accounting is that it is simple to maintain and allows you to quickly see how much cash is actually available at any given time.

ACCRUAL BASIS OF ACCOUNTING

In the accrual basis of accounting, revenues and expenses are recorded when they are earned, whether or not the money has been received or paid yet. In other words, transactions are counted as soon as the order is made or the service has occurred, whether or not the money for receivables has actually been paid. Income is counted when the sale occurs, and expenses are counted when you receive the goods or services. The disadvantage of the accrual basis of accounting is that it does not provide an awareness of cash flow.

FCA AND ACCOUNTING METHODS

Historically, most local governments use the cash basis of accounting. The accrual basis of accounting may give a fuller picture of solid waste management because building and managing solid waste facilities and programs requires significant expenditures both before and after the facilities are in use. Some organizations choose a modified accrual approach for accounting, in which some transactions are recognized when cash changes hands but others are accrued. Organizations must decide which system is best for them.

FCA is based on principles of accrual accounting. This means that FCA annualizes certain costs that were incurred in the past or that will be incurred in the future.

Under full cost accounting, past capital costs are annualized through depreciation while future capital costs are annualized through amortization. This helps to communicate the full costs of solid waste management to the public and helps local governments make sound management decisions.

ACCOUNTING TERMINOLOGY

To have the information to develop an FCA framework, you will need to gather various costs associated with ISWM. There are several different types of costs that will be needed, and it will be helpful to understand a few categories of costs.

Direct Costs

Direct costs are those costs that are directly linked to a specific activity, product or service. For example, a transfer station may incur the cost of wages and benefits for employees who operate the site, equipment that is used at the site, and utility bills for water and power. These are all direct costs.

Indirect (or Overhead) Costs

Costs that are not directly linked to a product or service are indirect costs, also called overhead costs. For example, the salary and benefits of a receptionist who answers phone calls for all local government offices—not just ISWM—is an example of an overhead cost. Overhead costs cannot be tied to a single activity. Other examples of overhead costs your ISWM program might incur include salaries for management and human resources (HR), legal costs that affect the whole local government, phone and IT systems and facilities costs.

Operating Costs

Operating costs are expenses associated with the maintenance and administration of governmental activities or business-type activities on a day-to-day basis. Operating costs are regularly recurring costs that are used over a short period, usually less than one year, and that are routinely incurred for ongoing operations. Salaries, wages and benefits are usually the largest component of operating costs. Operating costs may also include rent or lease payments, maintenance costs, utilities, fuel, supplies and interest payments. Operating costs are made up of fixed costs and variable costs. In

FCA, outlays are the same as operating costs because the outlay and the cost occur in the same period.

Capital Costs

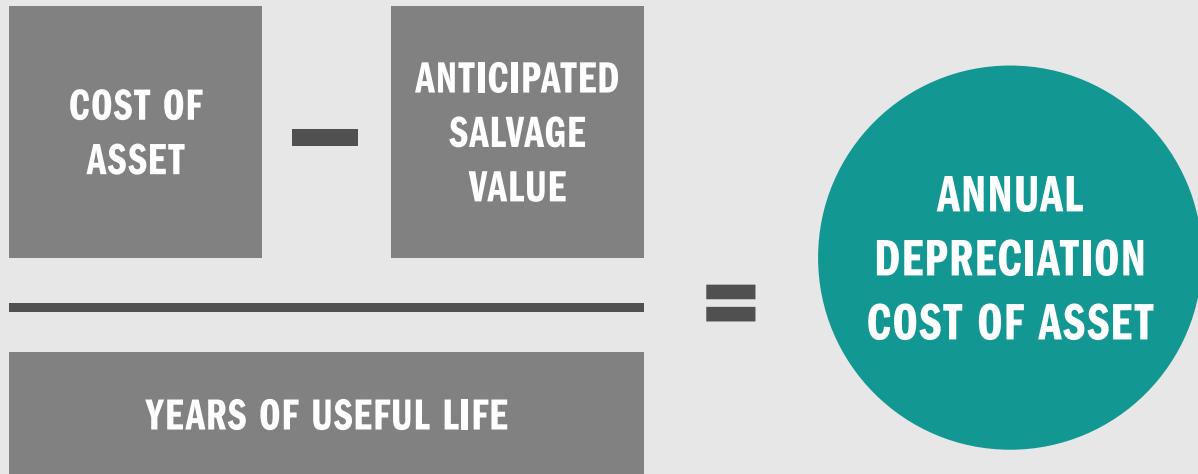
The cost of large purchases that have an expected life span of several years and that are used up over that several year period are considered capital costs. This type of outlay is not used in the one-year period in which it was purchased. Instead, the cost of this purchase should be spread out over the years in which it used.

Depreciation

For accounting purposes, depreciation expense does not represent a cash transaction. It indicates how much of an asset's value has been used up over time. This method of allocating the cost of a large purchase over the years of its useful life is called depreciation. Full cost accounting uses straight-line depreciation to calculate depreciation costs. Under this method, the difference of the asset's cost and its anticipated salvage value is divided by the number of years it is expected to be used as shown below:



CALCULATING DEPRECIATION



Amortization

Like depreciation, amortization is a method of allocating the cost of a purchase; however, in this case we are paying off debt from a purchase via a fixed repayment schedule over a period of time.

Amortization is a more sophisticated tool than depreciation and is used for projecting the cost of capital, whereas depreciation is a tool for estimating roughly the amount that should be set aside in a capital replacement fund. A payment plan for a piece of equipment is one type of amortization.

GASB AND GAAP

The Government Accounting Standards Board (GASB) is an organization that establishes accounting and financial reporting standards for U.S. state and local governments that follow Generally Accepted Accounting Principles (GAAP). GAAP are a common set of accounting principles, standards and procedures that local governments use to compile financial statements. Accountants use GAAP to ensure consistency, honesty and accuracy in managing financial information.

GASB publishes statements intended to guide state and local governments in the use of GAAP. GASB's Statement No. 55 identifies the GAAP hierarchy, which lists the order of priority of pronouncements that governments should follow when looking for advice on accounting and financial reporting. The first item on this prioritized list is GASB statements and interpretations. Several of these statements relate to full cost accounting for integrated solid waste management. For example, GASB Statement No. 18 addresses accounting for landfill closure and post-closure care. GASB Statement No. 51, Accounting and Financial Reporting for Intangible Assets, helps local governments understand when intangible assets should be considered capital assets for financial reporting purposes. All GASB statements can be found on GASB's website.⁸

Public organizations, like private ones, should consult with a skilled public accountant about the intricacies of GAAP and its application to your situation.

⁸ <http://www.gasb.org/jsp/GASB/Page/GASBSectionPage&cid=1176163026371>

REVIEW YOUR RECORDS

To complete the FCA spreadsheets that accompany this handbook, you will first need to review your existing records on the costs of your ISWM program. 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 ISWM systems. 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.

The FCA spreadsheets are designed to accommodate various accounting and financial recordkeeping practices used by local governments (See the Appendix for nonfunctional copies of the forms). Each local government should determine which forms are needed to calculate the full cost of the ISWM 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 ISWM program.

The decision regarding which costs to collect for FCA can be a question of judgement, but we have broken it down into several categories to help you decide what to consider pulling into your analysis. In some states laws govern what costs to include in an FCA analysis. For those working on this analysis for a reason other than complying with a law, the decision will be up to you. The following

sections outline the types of costs that could be included in an FCA analysis and reasons to include or exclude each.

What Activities?

You will need to collect cost and revenue information for the following general types of activities within your ISWM program:

- Collection
- Disposal
 - Landfilling
 - Waste-to-energy
- Recycling
 - Consumer products and packaging
 - Composting

To ensure that you are capturing all of the activities that you are aiming to include in your FCA analysis, it may be helpful to write a list of the steps within your program that solid waste follows, from its generation to its final disposal or recovery.

Whose Costs?

LOCAL GOVERNMENT COSTS

The most obvious costs to include in an FCA analysis are those of the local government. This includes costs to collect recycling and solid waste, address field calls from residents, operate landfills, transfer stations and other facilities, and any other cost that is directly related to ISWM operations. In addition, this includes overhead costs—the costs to operate the local government that are not

directly related to but inform or influence ISWM operations, such as administrative costs and managerial costs.

VENDOR COSTS

Costs to provide ISWM services should be included whether they are services provided by the local government staff or by a private contractor serving the local government. In some cases, some services of ISWM might be provided by a local government while others are provided to citizens by a private contractor. For instance, a county may have a drop-off recycling facility that is operated and paid for by the county, while residents of the county may also hire a waste hauler to collect trash at the curb. In this situation, whether or not to include the costs of the waste hauler is up to you, and depends on what you would like to share with your audience—citizens, management, elected officials or others—about your ISWM program.

CUSTOMER COSTS

Another consideration is which customer costs to include: residential, commercial, industrial or all of the above. This handbook focuses on two sets of customers: residential and non-residential. You could use the ideas presented in this handbook to break your costs down into customer sets of your own choosing as needed.

COMPILING FINANCIAL RECORDS

Once you have made decisions about whose costs to include and what costs to include, you will need to begin collecting information to prepare the FCA spreadsheet included as a part of this handbook.

To perform the FCA analysis for your local government, you will need to undertake the following steps:

- Identify all of the direct costs associated with providing ISWM services.
- Identify all of the indirect costs associated with providing ISWM services.
- Use your local government's financial records to assign the costs of ISWM services to the specific ISWM program (recycling collection, solid waste collection, landfill disposal, etc.).
- Allocate the program costs between residential and non-residential customers⁹.

To accurately identify all of the costs listed in Steps 1-3 above, it will be helpful to create or gather the following information:

- A description of your program.
- An inventory of assets.
- A list of staff directly reporting to the ISWM services included in your scope.
- A list of overhead costs for your local government.
- Available financial reports.

⁹ From the perspective of a public program and its operators, the customer both incurs the costs and provides revenues.

1) Program Description

A first step is to write a brief description of your ISWM program, including the history of the ISWM services offered by your local government, the services currently offered and your future plans. This does not need to take a lot of time; it can be a bulleted list. The goal is to help you identify all the areas in which there are costs. Although the goal of the FCA analysis is to understand the costs of your current program, looking to the history or future of the program can help highlight current costs you might otherwise overlook, for example, the cost of purchasing the land on which a landfill is located or future costs, such as landfill closures or purchasing new recycling containers.

2) Human Resources Inventory

To ensure that you have captured all the costs for staffing your ISWM programs, create a list of staff who support them. This should focus on employees who directly support ISWM programs, along with their wages and benefits.

3) Overhead Costs

After looking at the people that directly staff ISWM services, make a list of the staff members and departments that support ISWM indirectly, such as the budget office, the manager's office and administrative staff. This will help you understand all of the indirect costs that contribute to the success of ISWM.

4) Financial Records

Finally, you will want to gather your local government's financial records. You will need to collect several types of costs for each of the activities listed above. Depending on the solid waste services you provide, you may not have costs in each of the five categories listed below.

- Wages and Benefits
- General Operations and Maintenance
- Depreciation of Capital Outlays
- Amortization of Future Outlays
- Indirect Costs

You may also want to consider including costs for special circumstances, such as remediation costs at inactive hazardous waste sites. If you have an inactive landfill that requires corrective action for contamination of groundwater, soil or surface water, you can estimate the remediation costs and include those in your FCA spreadsheet. Whether or not to include these costs is a management choice.

Form A: Physical Asset Inventory

The next step in the process is to create an inventory of all the vehicles, buildings, equipment and land associated with your ISWM program that are owned or used by your local government. For each item in your inventory, you will want to know the age, condition, make, model and any modifications made after it was purchased. A sample inventory is included in the spreadsheets that accompany this handbook. Review the inventory and compare it to your program history to help

identify gaps in either document. This form does not provide information to other forms but can be used to develop the Capital Outlay Schedule on Form D: Capital Outlays.

Form B: Wages and Benefits

Under the first category, which is tracked in Form B, you will account for your annual costs related to solid waste services for direct labor and employee benefits for full-time, part-time and former ISWM employees. This category covers personnel who work directly for the ISWM program. People who do not work directly for ISWM, such as a city manager, will be captured as indirect costs under Form F.

For each employee in this category, you will need the following information:

- Name and position title
- Total annual wages.
- Total cost of benefits paid by the ISWM program, including any current payments for retirement funds, such as a 401k match.
- Total post-employment benefits, such as payments for pensions, paid by the ISWM program for former ISWM employees or their families.

Form B also allows you to allocate the costs of employee wages and benefits among four different ISWM program areas: solid waste collection, solid waste disposal, recycling and composting. You will need to determine the percent of time an employee spends on each program area and enter that into the appropriate cell in Form B.

Form C: General Operations and Maintenance

The costs of general operations and maintenance are the costs incurred to acquire current assets or resources that are used over a relatively short period of time (usually a year or less) and that are required routinely to support ongoing operations. This may include parts and supplies, fuel, minor repairs, rent or lease payments, utility payments, office supplies and consultant fees. Operations and maintenance costs should not include the costs for the purchase of capital goods, cash outlays for repaying the principal on debt for purchasing capital goods, payments for up-front expenses such as siting and construction of landfills, transfer stations or other ISWM facilities, or payments for the closure or long-term care of existing facilities. These capital costs will be entered on Form D.

You can also use Form C to allocate costs among the four program areas, by determining the amount of time a vehicle or piece of equipment is used to perform tasks for each program area. For example, if a bulldozer is only used at a landfill, then 100 percent of that cost should be allocated to the disposal program area. If a truck is used three days a week to collect yard waste materials and two days a week to collect materials at a landfill, then you would apply 60% of the cost of the truck's fuel to composting and 40% to disposal.

Form D: Capital Outlays

A capital outlay is an expenditure of funds to acquire a resource that will be used for more than one year, such as vehicles, buildings and equipment. Under the full cost accounting approach, capital purchases should be depreciated. The costs of capital outlays should be annualized in order to understand their impact on the ISWM program over the course of their useful lives.

Depreciation of capital outlays applies to assets purchased by your local government, including purchases that were financed. Interest payments should be included in this calculation. Buildings, vehicles and equipment that are leased should not be included here. Include them in Form C.

Upfront costs should also be included. For example, the cost for starting up a new ISWM program, such as implementing a curbside recycling program, should also be considered a "capital" expense and depreciated over the life of the activity. This could include graphic design costs for education and outreach materials, purchasing recycling containers, and other start-up costs. Upfront costs for new activities should be depreciated over the period of time the activity will be in effect or a reasonable estimate of the life of the activity.

Another example of an upfront cost that should be included in Form D is the planning, permitting and construction of ISWM facilities, such as landfills and transfer stations. Upfront costs for facilities can be depreciated using the straight-line method over the expected life of the facility.

Form D should also include buildings, vehicles, equipment and other capital goods, and they should be depreciated over their useful lives. Purchases that have been financed the interest payment should be included on Form C as operating costs. These costs should not be depreciated.

Typically, purchases of land are not depreciated, because they are kept indefinitely and maintain their value; however, when land is purchased for use as a landfill, it does have a finite useful life. Eventually, the landfill will be closed. This type of land purchase should be depreciated.

Like operations and maintenance costs, the costs for capital outlays can be allocated among the four program areas, based on how much each outlay is used by each program area.

Form E: Amortization of Future Outlays

A future outlay is an expenditure of cash in the future that is obligated by current or prior activities. In cash basis accounting, outlay costs immediately reduce earnings. In accrual accounting, outlay costs are split across all the periods that the expense applies to and matched to related revenues. This spreading out of capital expenses over a period of time is called amortization. Amortizing converts future outlays into annual costs. One example of a future outlay whose cost should be amortized for FCA is the closure and long-term care of a landfill. Even though the landfill may not close for many years, the landfill's revenue can be used in part to help cover those future costs, ensuring that funds are available to close and care for the landfill when the time comes.

Form E helps calculate amortization costs, but the basic idea is to take the estimated cost of the future outlay, subtract any amounts you have already amortized for that purpose, then divide by the number of years until you will need the funds. GASB provides detailed guidance on accounting for the costs of landfill closure and post-closure costs in its Statement No. 18, Accounting for Municipal Solid Waste Landfill Closure and Post closure Care Costs.¹⁰ Form E also allows you to allocate the costs of amortization among the four identified program areas.

¹⁰ Governmental Accounting Standards Board. Statement No. 18 of the Governmental Accounting Standards Board: Accounting for Municipal Solid Waste Landfill Closure and Post closure Care Costs. August 1993. Web.

Form F: Indirect or Overhead Costs

Indirect costs are the costs of support services or oversight provided to the ISWM program by other departments or agencies of the local government. These may include the cost for a city attorney or city buildings, or other essential services that help the ISWM program function. Sometimes, ISWM programs do not include indirect costs in the solid waste budget; however, these costs are still part of solid waste services and should be captured for the purposes of full cost accounting.

There are two main ways to account for indirect costs as a part of FCA. Option 1 is to calculate the ratio of your local government's ISWM employees to the total number of employees. The total budget for each individual, group or department is then multiplied by the ratio of ISWM employees to total employees.

Option 2 is to calculate the ratio of ISWM program costs as compared to overhead costs. For instance, if the ISWM program has direct costs of \$330,000, and the local government's total direct expenses are \$4,200,000, then

HOW TO CALCULATE INDIRECT COSTS (OPTION 1)

Let's say that your local government employs a total of 500 people, and 42 of them work on ISWM programs. The ratio of ISWM employees to total employees is expressed in the equation below:

$$42/500 = 0.08$$

This ratio of 0.08 can then be applied to indirect costs to determine how much of those costs should be applied to ISWM programs. For instance, if the total cost for support services such as budget, administrative functions, executive functions, tax department and office maintenance were \$2,500,000, then ISWM's share of that cost is:

$$0.08 \times \$2,500,000 = \$200,000$$

Thus the annual cost of indirect support services to ISWM programs, under this methodology, would be \$200,000.

ISWM direct costs are 7.9% of total direct costs. This percentage is then applied to the local government's total indirect costs to find ISWM's share of indirect costs. If total indirect costs were \$800,000, then the portion ISWM is responsible for is 7.9%, or \$63,200.

Form F guides you through the process of accounting for indirect costs by using Option 1. You will need to enter the number of ISWM employees, the total number of employees in your local government and the budget for your various indirect costs. The form will then guide users through calculating the cost of each indirect service to the ISWM program. The form will also allow you to allocate costs by program area using the number of ISWM employees in each program area.

Form G: Cost Summary

Form G summarizes all of the costs entered in the previous worksheets. You will need to enter certain revenues generated by the ISWM program, such as the sale of recycled materials. Once these are entered, you can use Form G to view ISWM net costs by program area.

Form H: Cost Allocation to Residential and Commercial Customers

Form H allows you to allocate the net costs of each ISWM program area by residential and commercial customers, assuming you have data available for the number of customers in each program area.

Form I: Unit Costs

Form I is designed to help users calculate unit costs for each program area in cost per ton for residential customers and cost per ton for commercial customers. Calculating costs by unit helps contextualize the overall costs of integrated solid waste management programs.

THE FCA TOOL

While 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. While FCA provides to local governments information that can be useful in making such determinations, it cannot provide fully standardized solutions for complex ISWM management decisions that involve many different variables. Because each program is unique, the workbook also does not prescribe a step-by-step method for all local governments to use to implement FCA systems.

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.

APPENDICES

FCA WORKSHEET EXAMPLES

Appendix Form A: Physical Asset Inventory

Ratio of ISWM Employees to Total Local Government Employees	
Total Number of ISWM Employees	
Total Number of Local Government Employees	
Ratio of ISWM Employees to Total Local Government Employees	0

Support Service	Total Budget for Support Service (\$)	Total Indirect Cost to ISWM (\$)
Accounting		0
Management		0
Budget Office		0
Building Operations		0
Administrative		0
Clerk's Office		0
Communications		0
Contracts		0
Information Technology		0
Insurance		0
Attorney's Office		0
Payroll		0
Human Resources		0
Purchasing		0
Other		0
Total Indirect Costs	\$0.00	\$0.00

Program Area	Number of ISWM Employees by Program Area	Ratio of Employees in Program Area to Total ISWM	Total Indirect Costs (\$)	Indirect Cost by Program Area (\$)
Collection		0	\$0.00	0
Disposal		0	\$0.00	0
Recycling		0	\$0.00	0
Composting		0	\$0.00	0
Total		0	\$0.00	\$0.00

Appendix Form B: WAGES & BENEFITS

	Employee Name	Position Title	Total Annual Wages (\$)	Total Annual Benefits (\$)	Total Annual Post-employment Benefits (\$)	Total Annual Wages and Benefits (\$)	Allocation of Annual Wages and Benefits Expenses by Program Area							
							Collection		Disposal		Recycling		Composting	
							%	\$	%	\$	%	\$	%	\$
1						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
2						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
3						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
4						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
5						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
6						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
7						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
8						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
9						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
10						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
11						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
12						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
13						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
14						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
15						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
16						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
17						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
18						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
19						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
20						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
21						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
22						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
23						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
24						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
25						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
26						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
27						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
28						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
29						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
30						\$0.00		\$0.00		\$0.00		\$0.00		\$0.00
	Total					\$0.00		\$0.00		\$0.00		\$0.00		\$0.00

Appendix Form C: General Operations & Maintenance

Description of Expenditure	Total Annual Cost	Allocation of Annual Wages and Benefits Expenses by Program Area							
		Collection		Disposal		Recycling		Composting	
		%	\$	%	\$	%	\$	%	\$
1			\$0.00		\$0.00		\$0.00		\$0.00
2			\$0.00		\$0.00		\$0.00		\$0.00
3			\$0.00		\$0.00		\$0.00		\$0.00
4			\$0.00		\$0.00		\$0.00		\$0.00
5			\$0.00		\$0.00		\$0.00		\$0.00
6			\$0.00		\$0.00		\$0.00		\$0.00
7			\$0.00		\$0.00		\$0.00		\$0.00
8			\$0.00		\$0.00		\$0.00		\$0.00
9			\$0.00		\$0.00		\$0.00		\$0.00
10			\$0.00		\$0.00		\$0.00		\$0.00
11			\$0.00		\$0.00		\$0.00		\$0.00
12			\$0.00		\$0.00		\$0.00		\$0.00
13			\$0.00		\$0.00		\$0.00		\$0.00
14			\$0.00		\$0.00		\$0.00		\$0.00
15			\$0.00		\$0.00		\$0.00		\$0.00
16			\$0.00		\$0.00		\$0.00		\$0.00
17			\$0.00		\$0.00		\$0.00		\$0.00
18			\$0.00		\$0.00		\$0.00		\$0.00
19			\$0.00		\$0.00		\$0.00		\$0.00
20			\$0.00		\$0.00		\$0.00		\$0.00
21			\$0.00		\$0.00		\$0.00		\$0.00
22			\$0.00		\$0.00		\$0.00		\$0.00
23			\$0.00		\$0.00		\$0.00		\$0.00
24			\$0.00		\$0.00		\$0.00		\$0.00
25			\$0.00		\$0.00		\$0.00		\$0.00
26			\$0.00		\$0.00		\$0.00		\$0.00
27			\$0.00		\$0.00		\$0.00		\$0.00
28			\$0.00		\$0.00		\$0.00		\$0.00
29			\$0.00		\$0.00		\$0.00		\$0.00
30			\$0.00		\$0.00		\$0.00		\$0.00
Total	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00

Appendix Form D: Capital Outlay

	Description of Capital Outlay	Purchase Amount (\$)	Anticipated Salvage Value (\$)	Purchase Amount - Salvage Value (\$)	Anticipated Useful Life (Years)	Annual Depreciation Expense (\$)	Allocation of Annual Wages and Benefits Expenses by Program Area							
							Collection		Disposal		Recycling		Composting	
							%	\$	%	\$	%	\$	%	\$
1				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
2				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
3				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
4				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
5				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
6				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
7				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
8				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
9				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
10				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
11				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
12				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
13				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
14				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
15				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
16				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
17				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
18				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
19				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
20				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
21				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
22				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
23				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
24				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
25				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
26				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
27				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
28				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
29				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
30				\$0.00		0		\$0.00		\$0.00		\$0.00		\$0.00
	Total					0		\$0.00		\$0.00		\$0.00		\$0.00

Appendix Form E: Ammortization of Future Outlays

	Description of Future Outlay	Estimated Cost (\$)*	Amounts Previously Amortized	Estimated Time Until Purchase (Years)	Annual Amortization Expense (\$)	Allocation of Amortization Expense of Future Outlays by Program Area							
						Collection		Disposal		Recycling		Composting	
						%	\$	%	\$	%	\$	%	\$
1					\$0.00		0		0		0		0
2					\$0.00		0		0		0		0
3					\$0.00		0		0		0		0
4					\$0.00		0		0		0		0
5					\$0.00		0		0		0		0
6					\$0.00		0		0		0		0
7					\$0.00		0		0		0		0
8					\$0.00		0		0		0		0
9					\$0.00		0		0		0		0
10					\$0.00		0		0		0		0
11					\$0.00		0		0		0		0
12					\$0.00		0		0		0		0
13					\$0.00		0		0		0		0
14					\$0.00		0		0		0		0
15					\$0.00		0		0		0		0
16					\$0.00		0		0		0		0
17					\$0.00		0		0		0		0
18					\$0.00		0		0		0		0
19					\$0.00		0		0		0		0
20					\$0.00		0		0		0		0
21					\$0.00		0		0		0		0
22					\$0.00		0		0		0		0
23					\$0.00		0		0		0		0
24					\$0.00		0		0		0		0
25					\$0.00		0		0		0		0
26					\$0.00		0		0		0		0
27					\$0.00		0		0		0		0
28					\$0.00		0		0		0		0
29					\$0.00		0		0		0		0
30					\$0.00		0		0		0		0
	Total				\$0.00		\$0.00		\$0.00		\$0.00		\$0.00

Appendix Form F: Indirect or Overhead Costs

Ratio of ISWM Employees to Total Local Government Employees	
Total Number of ISWM Employees	
Total Number of Local Government Employees	
Ratio of ISWM Employees to Total Local Government Employees	0

Support Service	Total Budget for Support Service (\$)	Total Indirect Cost to ISWM (\$)
Accounting		0
Management		0
Budget Office		0
Building Operations		0
Administrative		0
Clerk's Office		0
Communications		0
Contracts		0
Information Technology		0
Insurance		0
Attorney's Office		0
Payroll		0
Human Resources		0
Purchasing		0
Other		0
Total Indirect Costs	\$0.00	\$0.00

Program Area	Number of ISWM Employees by Program Area	Ratio of Employees in Program Area to Total ISWM	Total Indirect Costs (\$)	Indirect Cost by Program Area (\$)
Collection		0	\$0.00	0
Disposal		0	\$0.00	0
Recycling		0	\$0.00	0
Composting		0	\$0.00	0
Total		0	\$0.00	\$0.00

Appendix Form G: Cost Summary

Costs					
Category	Total Annual Cost to ISWM Program (\$)	Allocation of Costs by Program Area (\$)			
		Collection	Disposal	Recycling	Composting
B. Wages and Benefits	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
C. Operations & Maintenance	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
D. Capital Outlays	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
E. Future Outlays	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
F. Indirect Costs	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
G. Other Costs					
TOTAL COSTS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Non-Fee Based Revenues					
Category	Total Annual Revenues to ISWM Program (\$)	Allocation of Revenues by Program Area (\$)			
		Collection	Disposal	Recycling	Composting
Interest Income					
Sale of Recyclables					
Salvage of Equipment					
Micellaneous Revenues					
TOTAL REVENUES					

Total Cost					
TOTAL NET COST	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

Appendix Form H: Cost Allocation

ISWM Program Area	Total Net Cost	Allocation of Costs by Customer Class by Program Area			
		Residential		Commerical	
		%	\$	%	\$
Collection	\$0.00		\$0.00		0
Disposal	\$0.00		\$0.00		0
Recycling	\$0.00		\$0.00		0
Composting	\$0.00		\$0.00		0
Total	\$0.00		\$0.00		\$0.00

Appendix Form I: Unit Costs

ISWM Program Area	Costs per Unit by Customer and Program Area									
	Residential					Commercial				
	Total Residential Costs (\$)	Cost per Ton		Cost per Household		Total Non-Residential Costs (\$)	Cost per Ton		Cost per Customer	
		Tons	\$/Ton	Households	\$/Household		Tons	\$/Ton	Customers	\$/Customer
Collection	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	
Disposal	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	
Recycling	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	
Composting	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00	
Total	\$0.00	0.00	\$0.00	0.00	\$0.00	0.00	\$0.00	0.00	\$0.00	