

Miami-Dade County

On-Line Interactive Waste Reduction Tool for Businesses

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<i>GRANT REQUEST AMOUNT:</i>	\$160,000
<i>PROJECT TIMEFRAME (MONTHS):</i>	18 months for completion of project 12 months for release of application

PROJECT ABSTRACT:

Miami-Dade County is proposing to develop the “**On-line Interactive Waste Reduction Tool for Businesses**”, an Internet, database-driven website that will assist public and private businesses in determining how to reduce waste and recycle more effectively. This Innovative Grant project proposes to use existing business waste characterization data to help businesses formulate and implement environmentally responsible recycling and waste reduction action plans. Organizations accessing the website will be able to produce a customized waste characterization profile based on business type, and will be offered various waste reduction and recycling options. In addition, businesses will be able to generate a listing of appropriate vendors that accept targeted materials.

Potential economic and environmental benefits include: 1) management of solid waste at a low cost to businesses; 2) reduced need to conduct expensive and time consuming field audits to determine waste composition; 3) 24-hour on-line assistance to businesses -- a service that is minimally available from recycling coordinators due to lack of resources; 4) preservation of county’s landfill capacity; 5) conservation and better utilization of raw materials; 6) reduction of disposal costs; 7) increased compliance with State of Florida recycling objectives and Miami-Dade County’s mandatory commercial recycling ordinance; and 8) increased competition among certified recyclers.

The proposed application will be easily transferable to other counties in Florida by enabling them to add data specific to their counties. The central elements of the application will be developed with universal functionality. Documentation will be available to facilitate use of the application by other counties.

Total project cost is estimated at \$200,000, including \$40,000 of local in-kind contribution (20%) and \$160,000 in grant funds. It is anticipated that the project will be completed within 18 months of notification of grant award.

Project Description / Proposed Use of Innovative Technology

Project Description

There are over 30,000 commercial waste locations in Miami-Dade County, generating 1.7 million tons of solid waste annually. Although the County requires businesses to comply with a local recycling ordinance, cutbacks in recycling and education grant funds have eliminated on-site assistance with waste audits, a service that was available to businesses a few years back. The On-line Interactive Waste Reduction Tool will use the power of the Internet to provide a convenient, fast, and cost-effective way of reinstating and broadening this type of assistance for businesses.

A thorough search for similar on-line applications that offer waste characterization profiles by business type was conducted, and although none were found in Florida, two with relevant functionality were identified nationally. The first application was designed by the California Integrated Waste Management Board (CIWMB) to provide local governments and businesses throughout California with waste composition estimates (<http://www.ciwmb.ca.gov/WasteChar>). The second was designed by King County (Seattle) in Washington to provide a database of reuse and recycling options for businesses based on various material types (<http://dnr.metrokc.gov/swd/bizprog/index.htm>).

Miami-Dade County's proposed on-line interactive research tool will combine and enhance both of these innovative ideas into a single website with the following objectives: 1) to facilitate the estimation of waste composition by businesses; 2) to use these estimates to develop a plan of action that promotes the principle of source reduction first and then recycling; 3) to provide a database of resources to enable businesses to carry out their action plan; 4) to increase compliance with State of Florida recycling objectives and Miami-Dade County's mandatory commercial recycling ordinance; and 5) to assist businesses in potentially reducing the cost of solid waste disposal and recycling.

Our model assumes that businesses of a certain type dispose of similar wastes at similar rates, regardless of the location of the business. We will rely on data from the CIWMB's Statewide Waste Characterization Study to form the basis of our waste composition model. California's study is unsurpassed in magnitude or level of detail, containing over 1,200 commercially generated MSW samples drawn from 26 different types of businesses and institutions. Seven hundred (700) additional commercial samples will be added to the database in March of 2001.

Notwithstanding our assumption that like businesses generate similar waste streams, a comparative statistical analysis with Florida-based waste characterization data will be conducted to insure that the model is reflective of our local waste stream. The CIWMB has authorized use of its data for this project.

Proposed Use of Innovative Technology

The on-line Interactive Waste Reduction Tool will have a top-level page that introduces the website and provides users with information about the site's content and how to use the site. The website is linked to a relational database developed in SQL Server that contains waste composition data, information on various business types, and detailed profiles of recycling vendors. The application prompts users to select a business category from a list of 30+ business classifications, generating a table outlining the waste characterization profile for the category selected. The table can be sorted either by material type or by volume of material generated. Next to each material type will be two additional "buttons" for the user to click on – one for recycling options and the second for waste reduction options. The user can "select" recycling and/or waste reduction options from one or multiple material types, and the tool will customize the resulting information screen to reflect their selection (see Exhibit 1). The system will reside on Windows NT servers using Active Server pages.

To facilitate the development of the website, feedback from a variety of businesses will be solicited periodically as the project progresses. In addition, a small sample of local businesses and Recycling Coordinators from other counties in Florida will be engaged in the evaluation and testing of the website prior to its release to the World Wide Web.

The effectiveness of the website will be evaluated regularly by monitoring the number of visitors to the site, the number of "hits" recorded for various components, and through the feedback of local and statewide users.

The revolution of the Internet in the past few years has greatly increased government's use of technology as an enabling strategy in improving service to the public. Rather than relying on county employees to respond to inquiries or process requests for information, through the use of the Internet, the public can "serve themselves" through a wide variety of information and services.

Use of the Internet as a medium for communication, a method for e-commerce or a portal for accessing sophisticated databases, although a recent phenomena, is no longer considered "innovative" in the rapidly changing world of technology. Nevertheless the opportunities for converting traditional service-oriented functions into Internet-driven systems still abound.

The project outlined here represents just such an opportunity. It is the first application of its kind to tailor waste composition profile data specifically to business users to improve their solid waste management decision-making capability utilizing the power of the Internet. It takes information that has traditionally been gathered for use by governmental agencies and tailors it for relevance and dissemination to a broader audience. In doing so, it attempts to advance the sophistication level of the average business decision-maker by providing them with a level of detail about typical business classification waste streams that most have never had. And it does so at no cost to them.

Environmental and Economic Benefits / Cost-Effectiveness of the Proposed Project

There are several economic and environmental benefits associated with the availability of this type of tool over the Internet.

1. It offers the opportunity to greatly facilitate the use of waste composition estimates in making key solid waste management decisions by giving businesses access to a source of data that has, up until now, been available only through field audits.
2. These data will be accessible to them 24 hours a day, seven days a week.
3. Businesses are able to obtain these data at no cost.

Combined with informational material on source reduction opportunities and easy access to a comprehensive database of vendors, businesses will be able to more effectively manage their solid waste. Furthermore, the proposed program will benefit recycling coordinators by reducing the time and resources required to aid businesses with field audits, or waste reduction and recycling activities. Due to scarce financial support, this type of assistance to local businesses in Miami-Dade County has been virtually eliminated, thus creating a service gap. The cost for obtaining this service from a private sector consultant can range from \$800 to \$5,000. Although there is no way to verify actual cost savings potential, it should be noted that King County's web-driven database, in service on the Internet for just over a year, averages about 2,000 hits per month. This innovative tool will satisfactorily address this need at all levels.

While this application alone may not lead directly to greater quantities of recovered materials, it will advance the knowledge of businesses regarding the nature of their waste streams. This increased understanding will allow them to better target large segments of their waste stream for reduction and recovery. Businesses choosing to implement waste reduction opportunities will prevent or reduce the amount of waste created at their facility. This will ultimately aid in the preservation of the county's landfill capacity, the conservation and better utilization of raw materials, in the reduction of disposal costs at the business level, and increased competition among certified recyclers. Also, this project will facilitate the County's ability to identify additional certified recyclers not found in the list maintained by the Florida Department of Environmental Protection (FDEP).

Transferability of the Proposed Project

The “On-line Interactive Waste Reduction Tool for Businesses” is easily transferable to every county in the State of Florida irrespective of their geographic location, demographic, or commercial composition.

Central elements of the website, such as the ability to determine the composition of the waste generated by a particular business type and the options available to reduce waste, will be developed from the outset to have universal functionality. Any business from any county can avail themselves of this portion of the application immediately upon its release. The application will be designed such that other elements (i.e., the database of vendors) can be easily expanded to facilitate applicability of that component to other counties. This information would be stored, along with the application, on Miami-Dade County’s server. A user-friendly, stand-alone training manual that will facilitate transferability/expandability of the application (i.e., loading vendors into the database) will be available.

Porting the system to another county or governmental entity is also an option, providing the entity has a compatible hardware/software configuration. Arrangements for this type of transfer would need to be made directly with Miami-Dade County’s Information Technology Department.

Miami-Dade County will use electronic media to promote the use of this tool by other counties in Florida without restrictions. This effort will target recycling coordinators statewide and will include a link to Miami-Dade County’s website, “On-Line Interactive Waste Reduction Tool for Businesses”. This promotional effort will provide information on how to transfer this technology for their local use. The application will also be demonstrated at an environmental conference or chapter meeting (e.g., RecycleFlorida Today) to increase awareness of the tool and demonstrate the process and outcomes to other counties.

Local Support for the Proposed Project

Local in-kind contribution will total \$40,000 (20% of total project costs). We estimate that \$35,000 of the local match will be contributed by the Department of Solid Waste Management (DSWM) and the Department of Environmental Resources Management (DERM). This amount may be shared with other County departments which are in a position to support the cost of project administration and promotional expenses, including, but not limited to, promotion to local businesses, private recyclers, and other counties in Florida. The DSWM and DERM will also engage in the identification of recycling vendors and waste reduction data to develop a comprehensive database for use by local organizations accessing the website. The remaining \$5,000 in-kind contribution will originate from local businesses that will participate in the review of the pilot project.

Questions Raised by the Pre-Proposal Review Team

A. *Explain how this project will benefit businesses in Dade County only or statewide.*

The functionality of the proposed “On-Line Interactive Waste Reduction Tool for Businesses” is universal. This application will be developed based on a sound assumption that businesses of a certain type dispose of similar wastes at similar rates, regardless of the location of the business. In addition, the waste reduction options that the website will offer are applicable to all businesses and counties irrespective of their geographic location, demographic, or commercial composition. The system's data will be easily expandable to include information on recycling options/vendors specific to other counties. The web portion of the system will reside on Windows NT servers using Active Server pages. However, porting the system to another county or governmental entity will require a compatible hardware/software configuration.

B. *Will the software developed for this project be available without restrictions? Explain.*

The software developed through this project will be available to other localities without restriction. This policy assumes that counties requesting transfer of the software have the technical infrastructure to support the application and database.

C. *Will training for use of the software be needed or will it be intuitive? If training is needed, who will provide it?*

The proposed application will be developed with the end-user in mind. The pages accessed by the end-user will not require any special training or instructions other than those incorporated within the pages themselves. The objective is to create a software that can be used intuitively, thus reducing the need for training.

In addition, for counties wishing to transfer the system to their own host site, a user manual will be available to address access to the application, use of various web pages, loading of the database, and simple transferability issues. Any additional assistance, such as procedures for setting up a relational database, configuring web servers and web application servers, or making custom modifications to the application will have to be negotiated with the Miami-Dade County Information Technology Department.

Proposed Budget

Task Description	County Staff/ Subcontractor	In-Kind Contribution	Grant Funds Contribution	Proposed Budget
Development of Vendor Database and Waste Reduction Options	DSWM & DERM (and other County departments as needed)	\$15,000	\$10,000	\$30,000
Collection and Incorporation of Secondary Waste Generation Data	Planning & Economics Group (subcontractor)		\$23,000	\$23,000
Waste Composition Data Validation and Comparative Analysis	Planning & Economics Group (subcontractor)		\$10,000	\$10,000
Application Development and Testing	Miami-Dade Information Technology Department (subcontractor) and local businesses	\$5,000	\$107,000	\$112,000
Application Documentation (Manual)	Miami-Dade Information Technology Department (subcontractor)		\$10,000	\$10,000
Project Administration/ Coordination and Promotion	DSWM & DERM (and other County departments as needed);	\$20,000	\$10,000	\$30,000
TOTAL PROJECT COST		\$40,000	\$160,000	\$200,000
TOTAL AMOUNT OF REQUESTED FUNDS			\$160,000	

Justification for Total Amount of Requested Funds

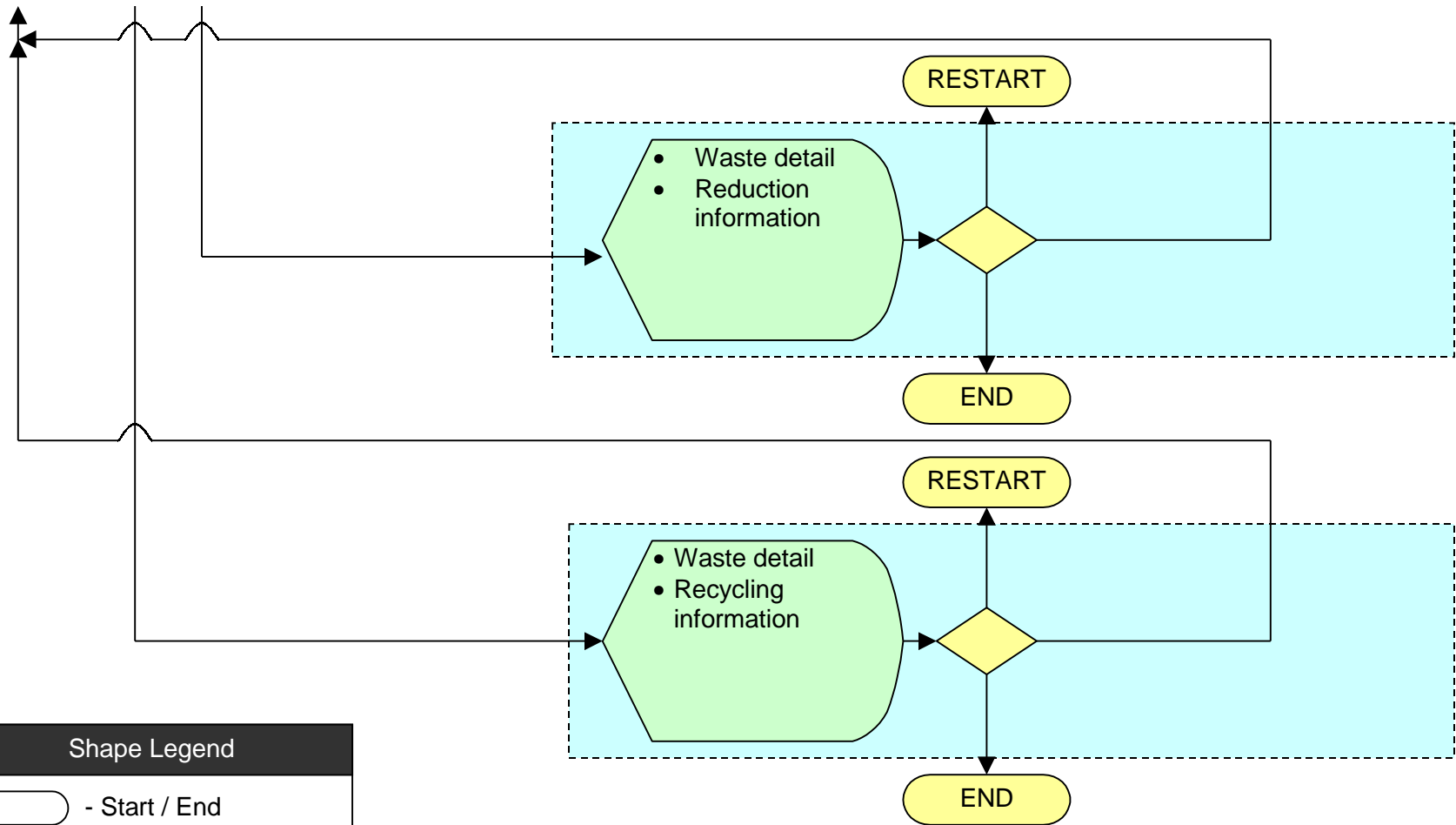
The Miami-Dade County Department of Solid Waste Management will enter into a Service Agreement with the Miami-Dade County Information Technology Department (ITD) to design, construct and maintain the website, conduct tests and review of the application, provide a location for the website, monitor and evaluate website activity, and facilitate portability and expansion of the website. In addition, the Planning and Economics Group, Inc., highly experienced consultants in waste composition studies, will be engaged in the incorporation, analysis, and validation of the secondary waste composition data that will be obtained from the State of California. Both subcontractors are aware of the time constraints associated with this project and have agreed to complete their deliverables within the grant period.


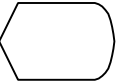
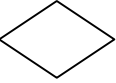
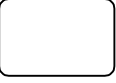
In order for the “On-line Interactive Waste Reduction Tool for Businesses” to be effective, it requires a flexible website capable of managing a high level of user interaction with the capacity to process large amounts of data. Additionally, this project requires the development of a database that is composed of accurate, current, and diverse information on various business types and business waste compositions. Extensive validation of secondary data and the comparative analysis will be essential to the success of this model.


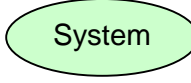
Based on the analysis of the tasks required to develop, implement, promote, and maintain the proposed application, it is anticipated that this project can only be accomplished if the requested level of funding is granted.


Proposed Timeline

Task/Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Development of Vendor Database and Waste Reduction Options																		
Collection and Incorporation of Secondary Waste Generation Data																		
Waste Composition Data Validation and Comparative Analysis																		
Application Development and Testing																		
Application Documentation (Manual)																		
Project Promotion																		
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	- Page boundaries