

## **2004-05 INNOVATIVE GRANT APPLICATION FORM**

### **Project Information (on applicant letterhead)**

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**6) Project Title:** Beach-Recycling Pilot Program and Evaluation

**7) Grant Request Amount:** \$112,870

**8) Length of project (months):** 18

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Authorizing Signature

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Title

## **PROJECT ABSTRACT**

(No more than 20 lines)

Florida's 1,200-mile coastline<sup>1</sup> includes more than 800 miles of some of the nation's most beautiful and frequently visited beaches,<sup>2</sup> yet only two Florida counties appear to have some form of beach recycling.<sup>3</sup> Existing beach cleanup and litter programs are no substitute for a comprehensive beach-recycling program. A new approach is needed to expand recycling beyond where we live and work, to where we recreate. Pinellas County proposes to develop, implement and evaluate a beach-recycling pilot program on several of the County's most popular beaches: Fort DeSoto, Sand Key, Treasure Island and St. Pete Beach.

Commingled containers and monofilament fishing line will be collected. A waste analysis will identify other potential recyclables in the beach waste stream, and several different collection containers and types of signage will be tested and evaluated. Recovery rates, contamination levels, service and maintenance issues, and other factors will be analyzed to determine the most efficient and cost-effective collection system. A survey of beachgoers will determine public reaction and preferences regarding the recycling program and collection systems, and will be used for making program improvements and developing additional public outreach.

Results of the pilot project will be used to develop a workable, cost-effective program to be implemented at Pinellas County's beaches, parks, and recreational areas, as well as others throughout the State. A beach-recycling program will complement the efforts of the Green Lodging Program to bring an overall enhancement to the "green" image we present to tourists.

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<sup>1</sup> <http://florida-facts.com/>

<sup>2</sup> Catanese Center at Florida Atlantic University, *Interim Report for Economic Benefits Analysis/Florida Beach Restoration*, 2003.

<sup>3</sup> Source: E-mail survey of Recycling Coordinators in coastal Florida counties.

## **PROJECT DESCRIPTION**

While residential recycling has become part of the norm and business recycling is increasing, “recreational recycling” is not even on the radar screen in most of Florida. Pinellas County will implement a pilot beach-recycling program at several of the County’s most utilized recreational areas, Fort DeSoto, Sand Key, Treasure Island, and St. Pete Beach.

A **beach-recycling program** should not be confused with existing beach cleanups and litter programs that are reactive rather than proactive. Pinellas County plans to research, implement and evaluate a pilot beach-recycling program, including several types of collection containers and signage. The pilot program will include collection of commingled containers and monofilament fishing line. Provided below is a brief description of the project elements.

### **Develop Pilot Plan**

Pinellas County Solid Waste will partner with the County Parks Department and the Pollution Prevention and Resource Recovery (P2R2) Program to develop a plan to implement the pilot program at three County-owned-and-maintained beaches. The Project Team will clearly define all steps of the pilot program, including types and placement of containers, collection and processing procedures and schedules, and evaluation methodology. In addition, several cities (among them, Clearwater, Dunedin, St. Pete Beach, and Treasure Island) have expressed interest and may also serve as program partners, pilot sites, or locations for program expansion.

### **Benchmark Waste Stream**

To benchmark program progress, an analysis of the composition and generation of waste on the pilot beach locations will be conducted prior to program startup, and at specified intervals during the pilot. This will allow the Project Team to evaluate recovery rates and contamination levels, and identify program issues and improvements as the pilot progresses.

### **Procure Collection Containers, Signs and Other Supplies**

The Project Team will utilize and evaluate several types of collection containers, comparing costs, service and maintenance, contamination, level of use, and other factors. Monofilament will be collected in containers made from PVC pipe. Appropriate signage and educational materials will be developed and tested in addition to the various container types.

### **Implement Pilot Beach-Recycling Program**

The pilot program will be conducted for a period of three to six months. Recycling containers for commingled bottles and cans will be placed adjacent to all garbage cans. For comparison purposes, the pilot may also include a program on Clearwater Beach, where recycling containers would be placed only on the parking lot side of the beach area.

### **Conduct User Survey**

A survey will be conducted to document reactions and preferences of beachgoers. Questions will relate to how clear the recycling instructions are, whether the containers are noticeable and convenient, and general willingness to recycle while recreating.

### **Evaluate Program Results**

Waste stream data (e.g., materials recovered, solid waste generated, contamination levels) and collection and processing costs will be used to evaluate overall program success and the costs and benefits of implementing a full-scale program. This data, combined with container service and maintenance information and the beachgoer survey results, will be used to evaluate the various container types piloted and to develop a cost-effective beach-recycling program for implementation throughout Pinellas County and elsewhere in the State.

## **Criteria 1: TECHNOLOGIES**

(35 points) 0-15 points for meeting one of the following sub-criteria, up to 10 more points for meeting two, and up to 10 more points for meeting all three. Note: applicant may adjust space used to address each sub-criteria.

### **Sub-criteria 1 – Not in common use in Florida**

Beach-recycling programs are not common in Florida. An e-mail survey of Recycling Coordinators in Florida's coastal counties was conducted; only Palm Beach and St. Lucie Counties indicated having recycling programs that target beachgoers. Escambia County has drop-off centers located near its beaches, but these do not specifically target beachgoers. The Project Team will review available information about these programs, as well as information from pilot beach-recycling programs conducted by the American Plastics Council (APC) in other parts of the country, in order to develop a pilot program plan that incorporates the most successful elements of each.

This project is also significantly different from existing beach cleanup and litter programs. Our project will **proactively** target the refuse of beachgoers – systematically collecting their recyclables rather than reactively scooping up their littered debris. A litter or cleanup program is no substitute for a comprehensive beach-recycling program.

### **Sub-criteria 2 – Novel application of an existing technology or process**

Collecting recyclables is not a new process; however, understanding how collection differs at a beach setting and knowing the best collection system to use is not well documented. Several different collection containers will be piloted, as well as various types of signage. Containers that might be piloted include the Alpha-container made by Equinox Industries, the Woodie and the 4-in-1 Woodie made by Recy-CAL Supply Company, and Outdoor Containers made by Rubbermaid. The Alpha container is especially unique in that it is buried 5 feet below ground to maximize the amount of recyclables collected and minimize collection frequency. Materials are reportedly self-compacted and kept cool by the earth to prevent odors.

Collection systems (types and placement of containers and signage) will be compared based on recovery rates, contamination levels, consumer preference, collection and processing costs, service and maintenance, and other factors. This evaluation will help identify the most efficient, cost-effective collection system for use at beaches.

### **Sub-criteria 3 – Overcoming obstacles to recycling/waste reduction in innovative ways**

Individuals are generally accustomed to recycling at home and sometimes at work, but the challenge addressed by this project is how to encourage them to recycle while recreating at the beach. The major challenges associated with recreational recycling are (1) making the public aware that the option to recycle exists, (2) establishing a collection system that is convenient for them to use but not abuse (i.e., by placing trash in recycling containers), and (3) cost-effectively collecting and processing the recovered materials.

This project will seek to meet these challenges by testing innovative containers (Alpha) and recycling approaches used in other non-recreational settings, as well as in beach-recycling programs piloted in other parts of the country. When designing the pilot program plan, the Project Team will structure the collection systems (containers and signage) to be tested to specifically address these obstacles. The final analysis will document how each system performed in overcoming each obstacle.

## **Criteria 2: TARGETS**

(10 Points) Demonstrate innovative processes to collect and recycle or reduce these targeted materials/sectors: Construction and Demolition Materials, Commercial/Institutional Sectors, Waste Tires. Note: if the proposed project also includes materials/sectors other than those targeted by this criteria, the project will receive less than the maximum 10 points allocated for the criteria.

Wastes generated at the beach are part of the commercial waste stream, with beaches being the State's primary tourist attraction. Of the 71 million annual visitors to the Sunshine State, more than 23 million of them go to beaches as a primary vacation activity.<sup>4</sup> In addition to tourists, Florida residents also frequent the beach. For not only does nearly 80% of Florida's population live in coastal counties; as of 1995, more than 60% of Floridians resided within five miles of the coast.<sup>5</sup>

The beach waste stream is rich in recyclable materials. According to data collected by the American Plastics Council, individual-serving bottles and cans are the predominant recyclables generated by beach users.<sup>6</sup> According to Bill Sanders, Executive Director of Keep Pinellas Beautiful (KPB), up to 40% of the litter collected on Pinellas County's beaches consists of recyclables. The waste analysis conducted as part of this project will better define the types and percentages of recyclables in the beach waste stream.

The pilot project will focus on those recyclables that are believed to comprise the largest percentage of recyclables, plastic and aluminum containers. In addition, monofilament will be collected because of the hazards it poses to wildlife if not properly managed.

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<sup>4</sup> Catanese Center at Florida Atlantic University, *Interim Report for Economic Benefits Analysis/Florida Beach Restoration*, 2003.

<sup>5</sup> Catanese Center at FAU.

<sup>6</sup> <http://tap.plastics.org/articles/mar2002/salisbury.html>.

### **Criteria 3: BENEFITS**

(35 points) Demonstrate the potential economic, environmental, and cost-effectiveness of the program's approach. Note: applicant may adjust space used to address each sub-criteria.

#### **Sub-criteria 1 - Environmental Benefits (15 points)**

- Methodology: This project will provide an opportunity and encourage beachgoers to recycle plastic and aluminum containers, which constitute a large percentage of waste generated at the beach. As mentioned previously, this is a waste stream consisting primarily of recyclables. In addition, monofilament fishing line will be collected for recycling through a program sponsored by Tampa Baywatch.
- Toxicity: Providing containers for monofilament fishing line and encouraging its collection will help keep it out of the coastal and marine environments, where it can cause severe damage to sea and bird life through entanglement or ingestion. From 1999 to 2000, more than 250 seabirds were rescued in Florida due to entanglements; and 92 of them died. In addition, one in every five manatee rescues between 1980 and 1999 involved monofilament entanglement.<sup>7</sup>

#### **Sub-criteria 2 – Economic Benefits (10 Points)**

Maintaining the pristine nature of Florida's beaches is crucial to the State's economy. Beach-related tourism generates \$41.6-billion in spending annually (\$21.9-billion in direct spending and \$19.7-billion in indirect spending).<sup>8</sup> At the local level, the project should lend aesthetic enhancement to beach locations where it is implemented, and provide employment in collecting and processing the recyclables.

#### **Sub-criteria 3 – Cost Effectiveness (10 Points) Includes, but not limited to cost reduction, payback period, sustainability, and cost-effectiveness.**

Pinellas County is committed to developing a sustainable, cost-effective beach-recycling program that can be implemented throughout the County. The level of commitment is best demonstrated by the interest already expressed by the cities of Clearwater, Dunedin and Treasure Island in participating in a beach-recycling program. The pilot will evaluate the cost-effectiveness and efficiency of various collection systems. Based on the results of the pilot, the Project Team will develop a plan for full-scale implementation that will be presented to the Recycling Subcommittee of the Pinellas County Technical Management Committee, which is a solid waste decision-making entity representing the County and cities within the County.

The Project Team will also make the most cost-effective use of vendors by requesting container manufacturers and distributors to donate or provide at reduced prices the containers for the pilot project. The Team will also enlist the help of volunteers, through groups such as Tampa Baywatch and KPBB, to conduct the user survey and assist with the waste stream analysis. In addition, the monofilament program is a low-cost program with minimal overhead. The County will also enlist the assistance of Kessler Consulting Inc., which has extensive experience in developing and implementing recycling programs, waste stream analysis, and program evaluation.

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<sup>7</sup> University of Florida Extension Service Fact Sheet.

<sup>8</sup> Catanese Center at FAU.

## **Criteria 4: TRANSFERABILITY**

(10 Points) Demonstrate transferability of technology and processes and specify how the project will promote transferability. Note: applicant may adjust space used to address each sub-criteria.

### **Sub-criteria 1 – Transferability of technology and processes (5 points)**

With Florida having more than 800 miles of sandy beaches, 32 coastal counties, and 60 percent of its population living within five miles of the coast, the results of this project should clearly be transferable to other Florida communities. Besides being a plan for full-scale implementation in Pinellas County, this pilot program should result in a comparison of collection systems that will be useful to those other communities. By understanding and learning from the pilot project results, other communities will be better equipped to tailor and implement effective beach-recycling programs of their own. In addition to its applicability to other beach locations, the lessons learned from this project will be transferable to State and local parks, public events, and other places where people recreate. Combined with the State's Green Lodging Program, transfer of this beach-recycling program to other recreational sites in Florida will enhance the "green" image presented to Florida's tourists and visitors.

### **Sub-criteria 2 – How project will promote transferability (5 points)**

Results of the project will be transferred to other communities within Pinellas County through the County's Technical Management Committee (TMC) and the TMC's Recycling Subcommittee. The TMC consists of solid waste managers from the County and the largest cities within the County. During the pilot project, a site visit will be planned for TMC and Recycling Subcommittee members to observe the pilot locations. Results of the pilot program will then be presented to the TMC and its Recycling Subcommittee at the end of the program, and the County will work with other municipalities to implement beach-recycling programs.

We will also promote transferability outside of Pinellas County by posting pilot program results on the County and City websites, and notifying county Recycling Coordinators of its availability via an e-mail announcement. Through this announcement, we will also invite other communities to visit the pilot sites and, depending upon the timing, we will explore the feasibility of including a site visit to the pilot locations during a Recycle Florida Today conference, which is held in Pinellas County every other year. In addition, we will share project results through normal avenues, including conference presentations, press releases, and journal articles.

## **Criteria 5: LOCAL SUPPORT**

(10 Points) Demonstrate local support for the proposed project in commitment of cash or in-kind matching funds.

- **00 points**    **0% up to and including 1% of total project cost**
- **01 points**    **Greater than 1% up to and including 10% of total project cost**
- **02 points**    **Greater than 10% up to and including 20% of total project cost**
- **03 points**    **Greater than 20% up to and including 30% of total project cost**
- **04 points**    **Greater than 30% up to and including 40% of total project cost**
- **05 points**    **Greater than 40% up to and including 50% of total project cost**
- **06 points**    **Greater than 50% up to and including 60% of total project cost**
- **07 points**    **Greater than 60% up to and including 70% of total project cost**
- **08 points**    **Greater than 70% up to and including 80% of total project cost**
- **09 points**    **Greater than 80% up to and including 90% of total project cost**
- **10 points**    **Greater than 90% up to and including 100% of total project cost**

Total Project Costs	\$166,970	
Total Grant Request	\$112,870	
Matching Funds	\$ 54,100	<b>32% of Total Project Costs</b>

Applicant: Pinellas County					Project Title: Beach-Recycling Pilot Program and Evaluation						
<b>Budget</b>											
(1) <b>Tasks</b>	Categories								Local Match		(12) Total Grant Request
	(2) Personnel	(3) Travel	(4) Equipment	(5) Supplies	(6) Contractual <sup>1</sup>	(7) Construction	(8) Other	(9)* Total Budget	(10) In-Kind Match <sup>2</sup>	(11) Cash Match	
Assemble Project Team; Develop Pilot Plan	\$4,000.00				\$4,450.00			\$8,450.00	\$4,000.00		\$4,450.00
Benchmark Waste Stream	\$3,360.00				\$6,100.00		\$3,000.00	\$12,460.00	\$6,360.00		\$6,100.00
Procure Collection Containers, Signs, Etc.	\$2,560.00			\$16,000.00	\$2,745.00			\$21,305.00	\$5,560.00		\$15,745.00
Implement Pilot Program	\$9,440.00				\$10,380.00		\$4,500.00	\$24,320.00	\$13,940.00		\$10,380.00
Conduct User Survey	\$2,080.00				\$3,500.00		\$2,400.00	\$7,980.00	\$4,480.00		\$3,500.00
Evaluate Pilot Results	\$2,400.00				\$4,050.00			\$6,450.00	\$2,400.00		\$4,050.00
Develop Plan For Full-Scale Implementation	\$4,400.00			\$50,000.00	\$3,545.00			\$57,945.00	\$4,400.00		\$53,545.00
Project Management & Administration	\$9,120.00				\$7,300.00			\$16,420.00	\$9,120.00		\$7,300.00
Progress and Final Reports	\$3,840.00				\$7,800.00			\$11,640.00	\$3,840.00		\$7,800.00
<b>TOTALS</b>	\$41,200.00	\$0.00	\$0.00	\$66,000.00	\$49,870.00	\$0.00	\$9,900.00	\$166,970.00	\$54,100.00	\$0.00	\$112,870.00

\* NOTE: Column 9 is the total of columns 2 through 8. It also should equal the total of columns 10-12

Percentage Match 32.40%

<sup>1</sup> Includes consulting, collection, and processing services.

<sup>2</sup> Includes County staff time, volunteer services, container discounts and donations, and in-kind processing services.