



---

# **Collier County Electronics Recycling Grant Final Report**

---

Report prepared by:

Solid Waste Management Department  
of Collier County, Florida

Denise Kirk, Waste Reduction & Recycling Manager

Janet Go, Assistant Recycling Coordinator

June 2003

## Table of Contents

	Page
Executive Summary .....	3
Background .....	4
Electronic Grant Program Description .....	4
Standard Electronics Receiving Procedures at our Recycling Centers .....	5
Results.....	6
Recycling DATA: Products Collected and Participation Number.....	6
Commodity Markets .....	9
Reuse .....	10
Market Development .....	10
End User Contact Information .....	11
Cost (Breakdown By Reimbursement) .....	11
Cost/Total Invoices Paid to the Vendor .....	11
Matching (50%) for Capital Equipment/Building .....	12
Operating Expenditures (Other contractual services, Advertising, Supplies, etc.) .....	12
Written Survey Of Participations Results .....	13
Specifics of the survey .....	13
Conclusions And Recommendations .....	14
Appendix A: Written Survey Forms Used in Collier County	
Appendix B: Pictures of the EE Collection Events Held At Collier County Recycling Center	
Appendix C: Brochure, Movie-Slides Advertising and Magnets On Our Electronics Recycling Program	
Appendix D: Pictures of Collier County Recycling Center Naples Recycling Center & Marco Recycling Center	

# **Collier County Electronic Products Collection and Recycling Grant Pilot Program**

## **1. Executive Summary**

The electronic recycling program is at no additional cost to residents, being funded by a start-up grant from Florida Department of Environmental Protection (FDEP) and within the Solid Waste Management Department's (SWMD's) current budget allocations.

Almost 85 cubic yards of landfill space has been saved since the electronic collection and recycling program began not to mention the avoided possible contamination threat to our water supply by the hazardous wastes, lead and mercury, contained in electronic equipment. The items collected were reused, recycled or demanufactured right here in Florida.

And as of November 20, 2001, residents were able to drop off electronics at both the Naples Recycling Center, Marco Recycling Center and Carnestown Recycling Center. Collier County is one of very few counties in the state to offer drop off of electronics for recycling.

"Recycling is our future. The future is now."

The Board of County Commissioners originally approved Agreement No.HW465 with the FDEP for electronics recycling on July 31, 2001, Agenda Item 16C(9).

Staff held two electronics recycling round up events. The November 16, 2001 event collected 7,384 lbs. of electronics. The January 12, 2002 collected 12,543 lbs. of electronics for recycling.

Due to the high quality of electronics being discarded in Collier and the franchise collection contract obligation to provide transport to the EE recycler, cost has been low and grant dollars stretched further. Staff successfully negotiated an extension of the grant funding completion date from July 30, 2002 to December 31, 2002 and a second amended extension through June 30, 2003.

The FDEP sent the Solid Waste Management Department an Amendment No. 1 to the original Agreement that changes the completion date of the grant from June 30, 2002 to December 31, 2002. And the second Amendment No.2 was approved which again extended the EE grant through June 30, 2003. Also, the FDEP, the State, or authorized representative shall have access to grant records for audit purposes during the term of the Agreement and for five years following the completion of the Agreement.

## **2. Background**

Collier County is located on the southwest Florida coast approximately 2 ½ hours south of Tampa. The County has a population of approximately 263,000 and the population increases 40% with seasonal visitors and tourists during the winter tourist season. The County generates about 550,000 tons of solid waste per year and has an adjusted recycle percentage of 26% as of year 2000. The County is divided into two collection districts, coastal District One serviced by franchised collection hauler and landfill operations management contractor, Waste Management, Inc. of Florida (WMIF) and inland District Two by franchised collection hauler, Immokalee Disposal, Inc (IDI).

In July 2001, Collier County expanded curbside recycling from nine to 21 items to include plastics #1 through #7, mixed paper and cardboard. Solid Waste Management Department staff was directed by the Board of County Commissioners to create an ordinance mandating non-residential recycling in the unincorporated areas of the County. The ordinance is pending while the SWMD works closely with the business community to encourage recycling on a voluntary basis.

Continuing expansion of the recycling program, the County began collecting electronic products in November 2001 for recycling through round up events, drop off collection sites and in addition in District Two, curbside collection of electronic products.

## **3. Electronic Grant Program Description**

During the March 27, 2001 regular meeting of the Board of County Commissioners, the BCC was informed by SWMD staff that as part of renewed/extended contract negotiations with WMIF and IDI, electronics recycling was included as an additional collection program. The program addition would be at no additional cost to County residents

IDI and WMIF are currently contracted as waste haulers for Collier County. These two haulers are, as agreed in contract negotiations, responsible for transporting electronic materials to a specified site at no additional cost to the County. The County bears the cost of recycling.

As part of the renewed contract, WMIF participated in electronic product round-up events, providing manpower during collection events and providing transportation of the electronic products to specifications to the recycling/demomanufacturer contracted by the County.

IDI provides drop-off containers on-site and picks up electronic products for recycling curbside at no additional cost to residents.

Two round up events were held at easily accessible locations within the community. The drop off sites, provided on the IDI site, the Naples Recycling Center and the Marco Island Recycling Center are easily located and accessed by residents.

Drop off of electronic products is limited to three items for business participants with a \$3 per item charge for additional items.

**DROP OFF LOCATIONS:**

Naples Recycling Center  
2640 W. Enterprise Ave.  
(off Airport Road at the north end of Naples Airport)  
Hours: 8 am – 5 pm Tuesday through Saturday

Marco Recycling Center  
771 E. Elkcam Circle, Marco Island  
Hours: 8 am – 5 pm Tuesday through Saturday

Carnestown Recycling Center  
East U.S. 41 & State Route 29  
Hours: Monday, 8 am – 5 pm

**Standard Electronics Receiving Procedures at our Recycling Centers:**

1. EE collected form must be filled out for every drop off.
2. **Electronics must be protected from the elements at all times.**
3. Items must be counted, palletized and shrink wrapped prior to shipping. Shrink wrapping should be tight enough to avoid shifting during transport.
4. Pallet count sheet – one copy attached to pallet, one copy for records.
5. Notify SW Operations Manager when enough pallets are ready for shipment. Full shipment = 20 to 25 pallets.
6. Scavenging and/or selling of electronic equipment is prohibited.
7. Recycling Center personal will be notified when the shipment is scheduled for pickup.
8. **Businesses** can drop off 3 items for free. They are to be charged for \$3.00 for each item after the third item. Drop off will be free for all County Departments only.
9. Residents may drop off any number of units for free. **(Keyboards or a mouse is not considered to be a unit)**

Collier County investigated, including site visits, the choice of electronics recycling/demanufacturing processor to ensure adherence to State requirements for electronics recycling and hazardous waste handling, constructing a contract to reflect the requirements to be met with Quicksilver Recycling Services.

#### 4. Results

Here is the breakdown of how much in pounds were diverted from the landfill and provided by our contracted vendor Quicksilver Recycling Services.

	(Pounds)
Collection Event November 2001;	Total collected = 7,384
Collection Event January 2002;	Total collected = 10,497
Recycling centers drop off shipped	March 2002 = 7,732
	June 2002 = 7,485
	August 2002 = 10,916
	September 2002 = 12,285
	November 2002 = 12,623
	January 2003 = 15,189
	March 2003 = 13,493
	April 2003 = 9,873
	June 2003 = 9,892
<b>Total End of Life Electronics Diverted</b>	<b>= <u>117,369 lbs.</u></b>

#### Recycling DATA: Products Collected and Participation Number

1<sup>st</sup> Collection Event Nov. 16, 2001; Total lbs collected = 7,384 lbs.

**# of Participation = 74 answered survey questions** (Appendix B)

(TV = 20; Computer Monitors = 79; Computers = 92; Peripherals = 108;  
VCR/Stereo = 44; Copiers = 2; UPS = 4; Phone equipment = 37 )

Overall Results: **Material Reused = 475 lbs.**

**Material Recycled = 6909 lbs**

Total: ..... 7,384 lbs.

2nd Collection Event Jan.12, 2002; Total lbs collected = 10,497 lbs.

**# of Participation = 85 answered survey questions** (Appendix B)

(TV = 54; Computer Monitors = 133; Computers = 74; Peripherals = 122;  
VCR/Stereo = 97; Copiers = 5 )

Overall Results: **Material Reused = 515 lbs.**

**Material Recycled = 9982 lbs**

Total: ... 10,497 lbs.

Recycling centers shipped on March 14, 2002; Total lbs collected = 7,732 lbs

**# of Participation = Drop off center started accepting EEE products in November, 2001 thru September, 2002.**

(TV = 23; Computer Monitors = 112; Computers = 40; Peripherals = 96; VCR/Stereo = 4; UPS = 22; Typewriter = 3; Phone equipment = 35)

Overall Results: **Material Reused = 547 lbs.**  
**Material Recycled = 7185 lbs**  
Total: ..... 7,732 lbs.

Recycling centers shipped on June, 2002; Total lbs collected = 7,485 lbs

(TV = 63; Computer Monitors = 57; Computers = 42; Peripherals = 49; VCR/Stereo = 61; Copy Machines = 2)

Overall Results: **Material Reused = 156 lbs.**  
**Material Recycled = 7485 lbs**  
Total: ..... 7,485 lbs

Recycling centers shipped August, 2002; Total lbs collected = 10,916 lbs

(TV = 20; Computer Monitors = 99; Computers = 80; Peripherals = 151; Fax = 2; UPS = 7; Phones = 15; Copy Machines = 17)

Overall Results: **Material Reused = 500 lbs.**  
**Material Recycled = 10416 lbs**  
Total: ..... 10,916 lbs

Recycling centers shipped September, 2002; Total lbs collected = 12,285 lbs

(TV = 48; Computer Monitors = 132; Computers = 58; Peripherals = 61; VCR/Stereo = 2; Copy Machines = 9; UPS = 39)

Overall Results: **Material Reused = 800 lbs.**  
**Material Recycled = 11485 lbs**  
Total: ..... 12,285 lbs

**= Drop off center continued accepting EEE products in November, 2002 thru April, 2003.**

Recycling centers shipped November, 2002; Total lbs collected = 12,672 lbs

(TV = 67; Computer Monitors = 85; Computers = 65; Peripherals = 70; VCR/Stereo = 73; Copy Machines = 35; Fax = 9; Phone = 6; UPS = 2)

Overall Results: **Material Reused = 830 lbs.**  
**Material Recycled = 11,793 lbs**  
Total: ..... 12,623 lbs

Recycling centers shipped January, 2003; Total lbs collected = 15,189 lbs

(TV = 70; Computer Monitors = 98; Computers = 66; Peripherals = 187; Fax = 8; Copy Machines = 11; UPS = 48; Board = 29 lbs; Wire/Cable = 47 lbs)

Overall Results: **Material Reused = 725 lbs.**  
**Material Recycled = 14,464 lbs**  
Total: ..... 15,189 lbs

Recycling centers shipped March, 2003; Total lbs collected = 13,493 lbs

(TV = 68; Computer Monitors = 145; Computers = 56; Peripherals = 97; VCR/Stereo = 28; Fax = 6; Copy Machines = 5; UPS = 8)

Overall Results: **Material Reused = 890 lbs.**  
**Material Recycled = 12,603 lbs**  
Total: ..... 13,493 lbs

Recycling centers shipped April, 2003; Total lbs collected = 9,873 lbs

(TV = 68; Computer Monitors = 65; Computers = 33; Peripherals = 98; VCR/Stereo = 61; Copy Machines = 1; Fax = 4; UPS = 20)

Overall Results: **Material Reused = 1,790 lbs.**  
**Material Recycled = 8,083 lbs**  
Total: ..... 9,873 lbs



**= Drop off center continued accepting EEE products in November, 2001 thru June, 2003.**

Recycling centers shipped June, 2003; Total lbs collected = 9,892 lbs

(TV = 50; Computer Monitors = 113; Computers = 72; Peripherals = 374; VCR/Stereo = 31; Copy Machines = 8; UPS = 9)

Overall Results: **Material Reused = 780 lbs.**  
**Material Recycled = 9,112 lbs.**  
Total: ..... 9,892 lbs

**Notes Regarding Commodity Breakdown:** The difference in the weight of items collected and the weight of the commodity breakdown is due to the UPS's that were received. There is no allotment in the reporting pages provided for battery weight, and the battery is 97% on the UPS. The battery weight for each shipment is specified by our vendor on each report submitted.

### **Commodity Markets**

The following commodities and markets provided by Quicksilver Recycling Services are listed as:

**Plastics –** Shipped to: Sun Valley Recycling  
Del Ray Beach, Florida

**Glass -** Shipped to: SDS  
Youngstown, Ohio  
(Contractor shipped to glass recycler)

**Copper  
Breakage -** Shipped to: Scrap All  
Tampa, Florida

**Metal  
Breakage -** Shipped to: Scrap All  
Tampa, Florida

**Circuit  
Boards -** Shipped to: Abington Metals  
Philadelphia, Pennsylvania

*Note: Additional End User Contact List is provided on page 10*

## Qualitative Questions:

### Reuse

- 1. Do you include reuse as a part of demanufacturing efforts? If no, did you consider including reuse but decide not to pursue? If yes please describe your reuse efforts.**

All collected electronic equipment is evaluated for reuse as is or for component reuse. Currently, markets have been identified for reuse of the following items/components.

CPUs/Laptops	P166 and Higher complete units only
Monitors	Manufactured after 1997 and Still Working
Televisions	Manufactured after 1995 and Still Working
Hard Drives	2 gig and Higher, Still Working
Memory Chips	32 MHZ and Larger

Items that do not fit the criteria are demanufactured and recycled. Quicksilver Recycling Services has adopted a "No Landfill" policy so every last component is recycled.

- 2. To what extent are spare tire software, parts, or repair manuals an issue for greater reuse?**

Most of these pieces cannot be reused as they are inadequate or they belong to software that is specifically licensed to one person or company. All of these types of items are baled and recycled.

### Market Development

- 1. Which materials are hardest to find markets for?**

Desk jet/ Ink jet Printers and Terminals are the hardest items to find markets for. Most people would rather buy a new printer than one that has been used, as they are inexpensive, and terminals are usually quite outdated by the time they are sent for reuse or recycling.

- 2. What role might the government have in improving those markets?**

Green procurement, purchasing items made with recycled material including recycled ink and toner cartridges.

- 3. How did you work with the overseas markets? What types of materials were sent overseas?**

Quicksilver Recycling Services does not work with overseas markets. We do not believe in sending our waste elsewhere to be sold or recycled, as this is our job, this is the service our customers employ us to do.

**End User Contact Information** (provided by Quicksilver Recycling Services)

AERC.com, INC.  
4317-J Fortune Place  
Melbourne, Florida 329804  
Contact: James L. Kington  
Phone: 800-808-4684

K. B. Industries  
1915 62<sup>nd</sup> Street North  
Tampa, Florida 33619  
Contact: Kevin Bagnell  
Phone: 727-647-2307

Envirocycle, Inc.  
P.O. Box 899  
Hallstead, PA. 18822-0899  
Contact: Greg Voorhees  
Phone: 570-879-2862

Onyx Superior Special Services  
8503 Sunstate Street  
Tampa, Florida 33634  
Contact: Sarah Musachia  
Phone: 813-249-0608

Global Investment Recovery  
5409 E. Henry Avenue  
Tampa, Florida 33610  
Contact: David Ritter  
Phone: 813-620-1507

Scrap All, Inc.  
2801 4<sup>th</sup> Avenue  
Tampa, Florida 33675  
Contact: Matt Goldman  
phone: 813-247-3619

**5. Cost (Breakdown By Reimbursement)**

SWMD received \$50,000 grant from FDEP for start-up of End of Life Electronics Recycling program, July 2001.

**Cost/Total Invoices Paid to the Vendor:**

INVOICES from the Vendor (Quicksilver) Amount total .....\$ 10,476.76

November, 2001	=	Invoice total amount	\$ 322.87
January, 2002	=	Invoice total amount	\$ 1,119.07
March, 2002	=	Invoice total amount	\$ 613.02
July, 2002	=	Invoice total amount	\$ 768.85
August, 2002	=	Invoice total amount	\$ 1,294.02
November, 2002	=	Invoice total amount	\$ 1,429.40
December, 2002	=	Invoice total amount	\$ 811.54
January, 2003	=	Invoice total amount	\$ 1,047.69
March, 2003	=	Invoice total amount	\$ 1,176.82
April, 2003	=	Invoice total amount	\$ 998.25
June, 2003	=	Invoice total amount	\$ 895.23

**Total: \$10,476.76**

Matching (50%) for Capital Equipment/Building:

September, 2001= Invoice amount =\$ 3,675.00 (Carport for Naples Recycling Center –drop off EE)	Paid = \$ 1,837.50
December, 2001 = Invoice amount =\$ 8,644.00 (Ted sheds for Naples and Marco Recycling Centers)	Paid = \$ 4,322.00
November, 2001 = Invoice amount =\$ 1,824.84 (Truck Pallet, Aluminum walk ramps @ NRC)	Paid = \$ 912.42
May, 2002 = Invoice amount =\$ 329.30 (Pallet fork for skidsteer)	Paid = \$ 164.65
October, 2002 = Invoice amount =\$ 325.00 (Hurricane proof door)	Paid = \$ 162.50
April, 2003 = Invoice amount = \$ 532.94 (Truck Pallet w/ steering @MRC; Cart)	Paid = \$ 266.47
April, 2003 = Invoice amount = \$ 5,849.48 (Concrete flooring @ NRC)	Paid = \$2,924.74

**Total: \$10,590.28**

Operating Expenditures (Other contractual services, Advertising, Supplies, etc.):

Other Contractual Services	= \$16,543.00
Rent (Collection Event)	= \$ 504.80
Other Ads (“)	= \$ 5,290.14
Printing &/or Binding	= \$ 765.75
Other Operating Supplies	= \$ 2,436.97

**Total: \$ 25,540.66**

Overall Expenditures and Balance of EE Grant Funding as of June 30, 2003:

Funds from EE Grant.....\$ 50,000.00

Paid to the Vendor (Quicksilver)	<b>\$ 10,467.76</b>
(50%) Capital Equipment/Bldg.	<b>\$ 10,590.28</b>
Operating Expenditure	<b><u>\$ 25,540.66</u></b>

**Reimbursed Total Requested: (\$ 46,598.70)**

BALANCE \$ 3,401.30

## 6. Written Survey Of Participations Results

### Specifics of the survey

This portion of the EEE survey was conducted on Marco Island in March, 2001 during a Household Hazardous Waste Round Up event. Participants were residents asked to answer the questions while they were voluntarily bringing in items to be properly disposed of. No incentives were offered in return for filling out this survey.

Of approximately 320 participants, 220 surveys were answered. A spreadsheet (Appendix A) is available with actual answer counts. Percentages may not add up to 100% due to questions left unanswered or marked not applicable.

### END OF LIFE ELECTRONICS SURVEY RESULTS

QUESTIONS
How many computers do you have in your home? 24% answered zero, 52% have one, 16% have two, 5% have three and 1% have four
Do you use a computer at work? 36% do, 60% do not
How often do you anticipate replacing your computer at home? 1% said in a year, 6% in two years, 13% in three years, 42% in four years, 1% in five years
Do you know there are hazardous wastes in electronic equipment? 60% answered Yes, 37% No
How many TV's do you own? 6% own one, 22% own two, 27% own three, 21% own four and 13% own five
How do you dispose of your used/outdated electronics? 33% trash electronics, 19% say they recycle them, 38% donate and 4% are storing them
Would you utilize a recycling/disposal drop off facility for your used electronics? 85% of respondents say they would while only 10% said they would not
Would you pay a small fee to recycle electronics? 69% answered Yes, 27% No
Do you recycle? 99% of respondents said they recycle, 1% said no
Are you a full or part time resident? 67% of respondents are full time residents, 32% part time
What is your age? 8% age 25-45, 15% age 45-55 and 78% age 55 and older

Data gathered may be specific to older Marco Island residents who are among a group already willing to make the effort to recycle. One third said they currently dispose of electronics by throwing them in the trash. Just over a third donated the equipment. As more surveys (Appendix A) are presented, a broader range of respondents should provide a more diverse sampling.

## **7. Conclusions And Recommendations**

Collier County was one of only eight Florida counties to receive the electronics grant from FDEP. And as of November 20, 2001 to the present, residents will be able to drop off electronics at both the Naples Recycling Center and the Marco Recycling Center. Collier County is one of very few counties in the state to offer drop off of electronics for recycling.

The following are recommendations for Electronic Recycling program:

- Creating a good contract with the recycling vendor is essential to Electronic Recycling program success.
- Recycling Piggyback from an existing contract/agreement if possible.
- Promoting, marketing and advertising are very important. The community needs to be continuously educated about the Electronic Recycling program.
- Establish collection and processing procedures from the beginning, i.e. shrink wrapping, collection containers and sites, scavenging and transportation.

As we like to say in the Solid Waste Management Department, "**Recycling is our future. The future is now.**"