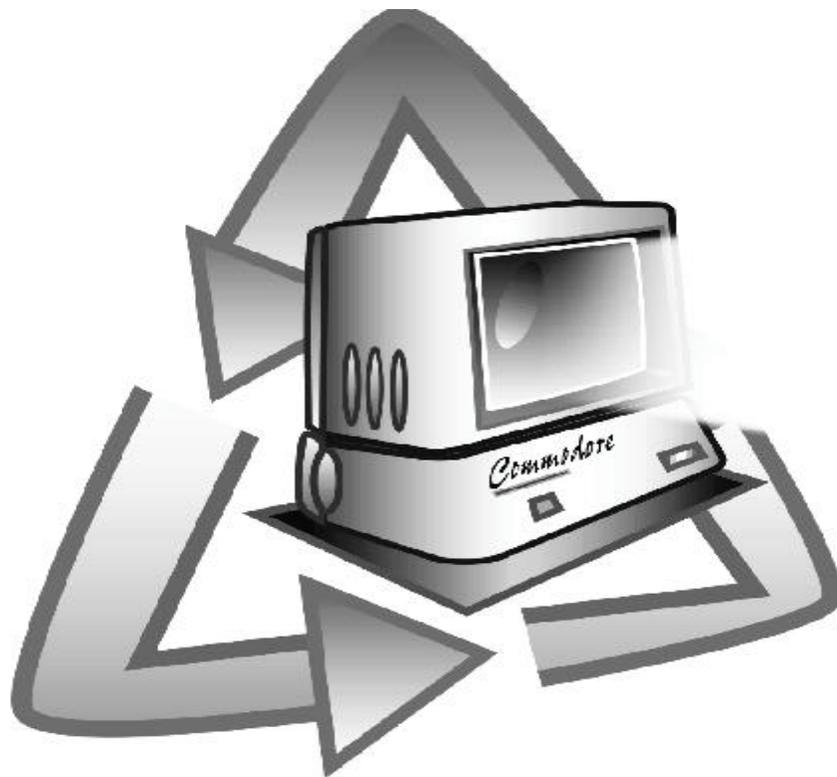


Organizing a One-Day Computer Equipment Recycling Event

A Planning Guide



*Funded by the United States Environmental Protection Agency Region VIII,
the Colorado Governor's Office of Energy Management and Conservation, and EcoCycle, Inc.*

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Introduction

The primary goal of this guide is to provide event coordinators with the basic tools to set up and conduct a one-day collection event for the recycling/reuse of old computer equipment. Six one-day collection events were conducted in Boulder County, Colorado in 2000/2001. The results provide the foundation for this document. Computer equipment was collected from residents and small businesses only.

Additional resources for planning electronics recycling events are available. They include: The Northeast Recycling Council (NERC) manual for "Setting Up & Operating Electronics Recycling/Reuse Programs," which provides excellent information on other models of collection events; and the Minnesota Office of Environmental Assistance report "Recycling Used Electronics," which provides excellent statistical data from several different models of collection events conducted in Minnesota. The NERC report can be viewed at www.nerc.org and the Minnesota report can be viewed at www.moea.state.mn.us.

Determining the Goals of the Event

The goals of your project will direct you in all aspects of planning a one-day collection event. Some of your goals may be:

- ? To divert toxic material from the landfill
According to the EPA, electronics and lead acid batteries are the largest contributors to lead found in landfills. CRT's (cathode ray tubes) found in monitors and TV's are the most toxic components in computer equipment due to the leaded glass that they contain.
- ? To generate revenues
This will affect the type of equipment you accept and the markets you use. Computer equipment may have value to some markets, but TV's, VCR's, tape decks, vacuum cleaners, boom boxes and other electronics are typically a "cost" item. If revenues are the goal, participant fees must be charged. The sale of material alone will not typically support the event.
- ? To refurbish and redistribute computer equipment to organizations that need it
There are many non-profit and charitable organizations that refurbish computer equipment and redistribute it to all kinds of needy groups. These groups are not typically set up to handle older end-of-life equipment, and usually only accept Pentium grade equipment and newer working monitors for reuse.
- ? To provide a recycling service to your community
Setting up your program may provide an opportunity for you to reach out to organizations and groups not typically included in recycling programs. Schools, businesses and governments can benefit from a computer equipment collection event. Small businesses and residents do not typically have an opportunity to recycle these items, so particular attention should be paid to these underserved groups.
- ? To maximize recycling rates
Many programs around the country accept all electronics (anything with a circuit board) to increase recycling rates and to give a simple, clear message to the public. The Minnesota demonstration project (mentioned above) accepted "anything with a cord or a battery."

Answering the following questions will help you set your overall project goals.

? What are your financial needs?

If the project must make a profit, you will need to choose a vendor that offers the highest price, sacrificing some environmental benefits for revenues. Since most markets charge for processing electronics, such as TV's and VCR's, no revenues will be seen for the sale of these materials. There are markets that pay for computer equipment, but these markets are volatile and probably sell materials to overseas vendors where the ultimate fate of the material is unknown.

? What materials do you want to accept?

If you want to maximize recycling and accept "anything with a cord," then you will sacrifice some revenues for greater recovery.

? Who do you want to serve?

If you want to serve large businesses, institutions and other non-residential, non-small business participants, you will increase the amount of material that you recycle, but also the processing costs.

? What do you want to happen to the CRT's (the glass portion of monitors and TV's)?

Since the CRT's contains a high level of toxins (lead), they are generally the main focus of collection programs. There is a full description below of the different types of recycling options for CRT's.

? Do you want to work with a non-profit charity?

Non-profit organizations that refurbish, reuse and distribute computers to needy groups are working to help narrow the "digital divide." Working with these organizations gives your project added social benefit.

Markets

Markets refer to the vendors or handlers of the electronics equipment that is collected. The overall goal of the project will guide you in determining your market selection. If your goals are to recycle electronics using high environmental standards, some revenues will be sacrificed for environmental benefits. If your goals are to maximize your profits, some environmental and social benefits will be sacrificed. The procurement guidelines of your organization may also influence your market choice and should be kept in mind when determining which vendor to use.

Listing of markets

There is a listing of electronics recyclers and reuse organizations in the Appendix of this guide. You can also ask your state environmental agency for information on markets.

Types of markets

There are a variety of vendor types, depending on the processes that they utilize to "recycle" electronics.

? Non-profit, refurbish/reuse companies are usually small, local groups who have staff or volunteers that refurbish the equipment to give to needy groups. These companies are mission

driven organizations that usually accept equipment that is Pentium grade and in working condition.

- ? Private refurbishers/retailers are usually domestic companies that repair, refurbish and resell computer equipment in domestic retail stores. These companies handle the most up-to-date equipment.
- ? Disassembly/demanufacturing companies dismantle and resell the valuable subcomponents from electronics. The remaining material, such as glass, plastic and metals, are separated and sold to metals refiners. These companies usually resell whole pieces of equipment too.
- ? Shredding companies have equipment capable of grinding whole computers and subcomponents for metals recovery.
- ? Consolidators/exporters are companies that consolidate computer equipment and send it overseas for reuse or recycling.

Determining which vendor to use

To determine the market that best suits your goals, first ask the basic questions:

- ? Does the market accept the material that you want to collect? Be specific.
- ? Are they able to service your region?
- ? What are the fees and revenues for various types of used computer equipment?
- ? Does the market pay transportation?
- ? Can the company provide on-site staff, forklifts, trailers, trucks etc. for a one-day collection event?
- ? Does the market operate using basic business practices?
 - Do they have the necessary local and state business permits?
 - Are there any federal, state or local enforcement actions against the company?
 - Can you audit the facilities?
 - Do they provide bonding or other financial assurances?
 - How many years have they been in operation (providing the services requested)?

You'll also want to determine that some of the other business practices of the market meet your specific goals. Research these specific areas:

- ? Does the market offer certification that indicates the percent of the materials recycled and how the computer equipment is processed (percent recycled or zero landfill policies)?
- ? What method does the market use for recovering CRT's in monitors?
 - Does the market send the CRT glass to a smelter, where the lead is recovered and the glass becomes a by-product (the "glass-to-lead" process)?
 - Does the market send the CRT glass to a "glass-to-glass" facility where the glass is made into new monitors?
- ? Does the market export or sell to buyers who export material?
- ? Does the market use domestic labor and pay prevailing wages (as opposed to prison labor or overseas labor)?
- ? Does the market dismantle and resell subcomponents such as disk drives, memory chips and other components as opposed to shredding all material for metals recovery?
- ? Does the market refurbish/reuse whole units? What percentage of the business is reuse/refurbish?

- ? For non-profit reuse organizations:
 - How does the organization handle unusable equipment that cannot be refurbished?
 - What is the organization's labor source?
 - Where are the refurbished units redistributed (what is its mission)?
- ? For de-manufacturers:
 - Is the company ISO certified? (ISO 14000 certification shows a high degree of environmental compliance.)
 - Does the company use metals refiners that are ISO certified?
 - Does the company recycle the plastics from electronics instead of landfilling them?
 - Are the materials demanufactured in the U.S.?
- ? Does the market offer assurances that data found on hard-drives will be protected against fraudulent use?
- ? Does the market have environmental-liability protection?
- ? Does the market offer traceability documentation for materials?
- ? Can the market provide a list of all vendors used to outlet the processed materials?
- ? Can the market provide a list of companies that have used their services?

After researching the business practices of the market, you may want to rate the companies according to your goals by developing a scale of environmentally preferable versus market driven vendors. For example, if your goals are environmental, one end of the rating scale would be markets that maintain high environmental standards of performance and you'll want to work with companies that line up on this end of the scale. If your goal is to optimize revenues, despite environmental costs, you would work with vendors who rate high on the market driven end of the scale. Using this scaled approach, the Boulder County project evaluated markets as follows.

The "environmentally preferable" vendors:

- ? Have a reuse component
- ? Can certify that over 98% of the incoming computer equipment will be recycled (less than 2% landfilled)
- ? Have an impressive client list, including IBM and Sony
- ? Use the glass-to-glass method for recycling CRT's (vs. glass-to-lead method)
- ? Use ISO certified metals refiners for metals
- ? Recycle all plastics from electronics
- ? Use domestic labor
- ? Can fully trace all materials to their ultimate destination
- ? Maintain environmental-liability protection
- ? Recycle all incoming stretch wrap, cardboard and pallets
- ? Use only water-based cleaning solvents for all internal machinery
- ? Offer hard-drive data protection

The cost for the Boulder County project to transport and recycle computer equipment using the environmentally preferable method was about \$.24 per pound in December of 2000.

The “market-driven” vendors:

- ? Use exporters to market material, so the ultimate fate of the material is unknown
- ? Send the material to Mexico and Asia where environmental standards are less stringent
- ? Are volatile due to world market conditions

The net revenue in February of 2001 for the Boulder County project averaged \$.06 per pound using the market-driven vendors.

The purpose of a good marketing plan is to find a balance between the extremes that still accomplishes what is important to the project. The Boulder County project experimented with both ends of the scale and found “balanced” markets that met the environmental goals of the project while still making it affordable for the participants and the organizers. The cost to process material for the Boulder County project using the “balanced method” was about \$.15 per pound for processing and transportation to market.

Estimating Participation

Participation is dependent on the type of material collected, promotions, target audience (businesses, residents, governments, etc.), location and, to a lesser degree, whether a fee is charged. In the six communities where we held events, the average income of residents did not seem to affect the participation rate; however, it did affect the quality and age of the equipment recycled. If this is the first computer recycling event for a given community, expect a high volume of material per participant because most households are storing equipment. The following participation estimates are based on one-day collection events that:

- ? were held in prominent locations
- ? charged participants a recycling fee
- ? were extensively promoted
- ? accepted only computer equipment (no TV's, VCR's, fax machines, etc.)
- ? did not allow large businesses and institutions to participate (only businesses with 50 or fewer employees)
- ? were the first of their type in the communities served

The following statistics and formulas were derived from data collected in the Boulder County project and other projects around the U.S. They can be used to assist you in estimating participation for your event.

How many people will participate?

Participation in the six Boulder County events ranged from 1% to 4.3% of the population in each community. To estimate the number of people that might be expected, use 2%. The Boulder County events averaged 2.43 people per car according to survey results. To estimate the number of cars that might be expected, use 2.5 people per car.

Assuming that you want to project the participation rate for a city of 100,000 people, you can use the following formula: 100,000 people \times 2% participation = 2,000 people. To estimate the number of cars: 2,000 people \times 2.5 people per car = 800 cars.

What amount and type of material can be expected?

Average amount of material:

- ? 94 pounds per car if only computer equipment is accepted (no TV's, VCR's, etc.)
- ? 118 pounds per car if all electronics (anything with a circuit board) are accepted (estimate derived from the NERC report)
- ? 3.6 pieces of equipment per car (monitor, CPU and printer = 3 pieces)

Average type of materials (by weight):

- ? 44% monitors
- ? 32% CPU towers
- ? 10% printers
- ? 1% laptops
- ? 13% other
- ? Less than 3% of the material collected will be Pentium grade CPU's or newer working monitors.

Assuming that you wanted to conduct a one-day event in a city of 100,000 people, and collect only computer equipment, the following formula could be used to roughly estimate how much computer equipment you can expect: 100,000 people \times 2% participation \times 2.5 people per car \times 94 pounds per car = 75,200 pounds.

Estimating and Controlling Costs

There are two basic types of costs for these events: 1) collection related costs that include items such as staff time, site and building costs, publicity and supplies; and 2) processing related costs that include recycling fees and hauling costs. Staff time and publicity account for the majority of the collection related costs. Depending on the market you use, recycling fees make up about 2/3 of the processing related costs while transportation makes up about 1/3 of those costs. The size of your event will naturally affect both of these types of costs. On average it cost \$5,000 (excluding donated services) for collection related costs and about \$.15 per pound for processing related costs for the Boulder County events.

The following are some methods to use to control both types of costs. Many of these donated services helped cut the cost of the Boulder County events.

? Staffing:

Since staff time is a major cost, solicit volunteers from:

- civic groups like Kiwanis and Rotary
- faith-based groups
- high school environmental clubs

- recyclers and waste haulers
- law enforcement groups responsible for community service programs and county prisoners

? **Publicity and outreach:**

There are many free or inexpensive opportunities to promote your event such as:

- ads in municipal water bills
- posters and flyers in computer and electronics stores
- community event sections of the newspaper (or newspaper sponsored ads)
- company and city websites
- cable television
- press releases
- radio PSAs
- waste and recycling billings
- speaking opportunities at civic organization functions

? **Recycling fees:**

These costs can be reduced by:

- accepting only computer equipment at the event – TV's, in particular, are heavy and expensive to recycle
- sorting materials carefully to find the reuse opportunities – non-profit charities can reuse most Pentium grade equipment and newer monitors that are still in good working order

? **Transportation fees:**

-These costs can be reduced by:

- finding a vendor that is close to your event
- stacking monitors 5 to 7 high on pallets, allowing for full height utilization of the truck
- tightly packing materials – hauling costs are the same no matter what the weight of the material inside (a well packed semi trailer will weigh about 28,000 pounds and a loosely packed trailer will weigh less than 20,000 pounds, yet the freight cost will be the same)

Assuming the same city population of 100,000, a 2% participation rate and a processing cost of \$.15 per pound, the following cost would be shown for our hypothetical event:

- \$5,000 for collection related costs
- \$11,280 in processing costs for 75,200 pounds of material generated

Participant Collection Fees

Whether to charge a fee to participants is influenced by your budget and local customs. It has been found that the portion of the population that wants to participate in a computer recycling event will not be dissuaded by a modest fee. The common price structure ranges from \$5 to \$15 per monitor and \$0 to \$5 per piece of other computer equipment. Some programs also charge based on weight, but a “per item” fee allows the public to easily estimate how much they will be charged before they get to the event.

Using the following assumptions, an estimate of revenue from our hypothetical event can be made:

- ? A fee of \$10 per monitor is charged to each participant, other equipment is free
- ? 75,200 pounds of total equipment is collected and 44% (or 33,088 pounds) of the equipment is monitors

- ? The average weight of a monitor is 30 pounds, so approximately 1100 monitors are collected

In this scenario, 1100 monitors x \$10 per monitor fee = \$11,000 in revenues from the participants.

Sponsors and Partners

There are many areas of the event where sponsors can be engaged, including:

- ? advertising
- ? food
- ? site and building use
- ? equipment use
- ? cash donations to help offset the marketing costs

Developing partnerships in your community has many short and long term advantages. The type of partner you reach out to will directly reflect on the project. If the public perceives that the project partners are environmental in nature and/or have social value, they may be more willing to pay a small fee. Additionally, if a corporate sponsor is engaged, your project may be given instant credibility in the public's eye. There may also be a whole new set of promotional opportunities through that corporate sponsor's contacts.

Be clear why you are contacting a potential sponsor and what you are asking for before you approach them. Some potential sponsors include:

- ? manufacturers of the equipment that you are collecting—such as IBM, Intel or Hewlett Packard
- ? local newspapers
- ? cities and counties
- ? office supply and electronics retailers such as CompUSA
- ? shopping malls
- ? local restaurants
- ? civic and church groups
- ? non-profit reuse and charitable groups such as Goodwill

Most organizations want to be associated with an environmental event that also has a social element.

Site Selection and Layout

The types of sites that are typically used are:

- ? recycling centers
- ? solid waste transfer stations
- ? permanent household hazardous waste sites
- ? fairgrounds
- ? mall, school or other parking lots

Look for the following features when selecting a site:

- ? Easy access – good egress and ingress is essential. Talk to local police and city traffic planners for advice.
- ? A high visibility location – sponsors like high visibility locations and residents need to be able to easily find the event.
- ? Space – there needs to be enough room for cars to line up without getting into the main traffic flow. Space is also needed for at least one semi trailer and all the equipment for the event. See the site map in the appendix to give you a better idea of space needs.
- ? A covered area – this is needed to store collected materials and give the staff and volunteers a place to get out of the weather. Large tents are commonly used if on-site buildings aren't available.
- ? Pavement – pallet jacks will probably be used to move the collected equipment, so a smoothed paved surface is needed.
- ? Bathrooms and a telephone – if facilities are not available, portable toilets and cell phones work well.
- ? A loading dock – this will make it easier to load equipment into trailers. If a dock is not available, a forklift that can pick up and load heavy boxed material into a semi trailer will be necessary. Skid steer loaders, front-end loaders and other machinery can also be used.

Once the site has been selected, a diagram showing the layout can be developed. The diagram should show the following:

- ? traffic flow
- ? where cars will wait in lines
- ? lanes for unloading cars (At least 2 unloading lanes should be used to ensure a smooth flow of traffic. A third lane can also be used to unload large volumes of materials.)
- ? work areas for staff to unload and package collected materials
- ? areas for trucks and trailers
- ? parking areas for volunteers/staff
- ? areas that need signage to direct participants through the event
- ? area for trash and recycling stations
- ? area for volunteers and staff to take breaks, receive training, etc. (Tents, buildings or other covered structures are needed in Colorado.)
- ? areas for each volunteer station (i.e., greeting station, unloading station)

After you have developed a site map, show it to city traffic planners, the police, the vendor (market), the property owner, the neighbors and other key players that will be affected by the event. After the site map is completed, it should be used for training the staff and volunteers so everyone is familiar with the layout.

Staffing and Training

Depending on the volume of material expected, 10 to 25 staff and volunteers will be needed on site for the duration of the event. Since most collection events start at around 9:00am and end around 2:00pm, two shifts may be needed to reduce fatigue and allow volunteers the opportunity to

help in either the morning or the afternoon. Any of the jobs described below can be staffed by a volunteer with the exception of the equipment operator.

- ? At least one traffic control person responsible for safely directing traffic from the street to the greeter area. Police officers are suggested whenever possible. Police are well trained to handle emergency situations, so their presence is very reassuring to planners.
- ? At least two greeters responsible for welcoming participants, answering initial questions, making sure that each car is counted, assisting participants in filling out surveys, unlocking trunks and doors (participants should stay inside vehicles at all times), and directing them to the unloading station. Volunteers and staff who have a welcoming personality are important for this position.
- ? At least one “expert” responsible for determining the type of equipment being dropped off and its potential for reuse. A computer “guru” is needed for this position. If you are working with a reuse group, they will have “expert” staff that you can enlist.
- ? At least one money/survey collector responsible for taking money and surveys. A trusted person that can make change fast is key.
- ? At least two unloaders responsible for unloading the vehicles. They will count equipment and place it on the proper table, and will sort monitors from CPU towers and other equipment. Strong backs are important for these positions. Since this tends to be very physical labor, consider rotating this position several times throughout the day.
- ? At least two loader/packers responsible for tightly packing material into gaylord boxes or stacking and stretch wrapping monitors onto pallets. Your market will give you specifications for packaging the collected materials. As mentioned above, the more weight you can get inside a truck, the cheaper your freight costs will be.
- ? At least one equipment operator responsible for driving forklifts and operating pallet jacks. A very safe employee who is insured and has experience is critical in this position. This person can double as a roamer if the event is small.
- ? At least one roamer responsible for communicating with the other staff and volunteers, getting water, replenishing supplies, etc. An event organizer is best for this position because she/he is familiar with the entire setup.

Each staff and volunteer must be trained, and should attend a brief training session before the event. The training should cover a description of the hazardous components found in computers, basic operational questions and the proper procedures for lifting and handling equipment. Each person who lifts and handles equipment should wear gloves and a back support. All staff and volunteers should wear safety vests. A letter that was sent to all volunteers and staff explaining the Boulder County project can be found in the appendix.

Supplies Needed

The following is a list of equipment and supplies needed for a collection event. Many of these items can be borrowed from or donated by local businesses.

Materials handling equipment:

- ? folding tables –at least 4 to 6

- ? pallets – approximately 1 pallet for every 500 pounds of material collected
- ? gaylord boxes –approximately 1 box for every 500 pounds of computer equipment, excepting monitors which will probably be stacked directly on pallets and stretch wrapped
- ? stretch wrap and stretch wrap dispensers – 5 roles of wrap and at least 2 dispensers
- ? pallet jacks
- ? forklift, skid loader or other equipment capable of lifting 1,500 pounds into the back of a semi trailer
- ? dumpster for foam packaging materials
- ? recycle container for cardboard

Traffic control:

- ? promotional banners –to identify the site sponsor’s logo
- ? directional signs – so participants know exactly where you want them to be at all times
- ? traffic cones

Safety supplies:

- ? safety vests
- ? gloves
- ? eye protection
- ? eye wash station
- ? first aid kit
- ? numbers for contacting Haz-Mat, police and fire

Data and money handling:

- ? surveys and educational brochures
- ? clipboards and pencils for participants to fill out surveys
- ? duct tape, pens, magic markers, staplers
- ? bin for holding completed surveys
- ? receipt books
- ? money aprons for collectors
- ? change for starting banks
- ? lockable cash box

For volunteers and staff:

- ? name tags
- ? tents for breaks (if a facility is not available)
- ? folding tables and chairs
- ? cloth napkins
- ? mugs for coffee
- ? reusable plates
- ? ice and coolers
- ? tea, coffee, soda and water
- ? breakfast, snacks and lunch
- ? heaters for break area
- ? extension cords

- ? portable toilets (if facilities are not available)
- ? recycling bins for break area

Promotion

Promotion and education are key and should be targeted to the people that you want to participate in your event. For example, if you want only city residents to participate, the water bill is an excellent way to target them. If you want everyone in the surrounding area to participate, then flyers and the newspaper may be more effective. You may want to limit participation due to budget constraints, so advertise accordingly.

Although every community is a little different, the newspaper and water bills seem to be the most effective promotional tools. Televisions seem to be the least effective. The Boulder County project received TV exposure from two major television stations before the first collection event was held. The project planners were concerned that they would be overwhelmed with material from outside the service area. However, survey results indicated that only about 3.5% of the participants found out about the event through television, while more than 85% found out through the water bill and newspaper.

Press releases are an excellent way to educate the press and public as to why computer equipment should be recycled, and are useful to promote the event. There are sample press releases and flyers in the appendix. Flyers, press releases, posters, etc. should cover the basics – who (include sponsors), what, where, why, when and how much (if there is fee.) “Why” is very important because it is your opportunity to educate the public. The following are some additional suggestions:

- ? Create a catchy phrase or short slogan that captures the message that you are trying to convey. The Boulder County project wanted to convey the message that electronics contain lead because the majority of the public understands the health threats associated with lead poisoning. So, “Get the Lead Out” became the project’s theme. All of the promotional information used the same phrase to maintain a consistent message.
- ? If you are going to use water bills, contact the city as early as possible. Other city departments also use the bills for promotion and space may be limited.
- ? It takes about eight weeks to develop, print, address and mail a bulk mailing to businesses or residents. The mailing should be done about four days before you want people to receive them (typically about two weeks prior to your event).
- ? The newspaper needs about two weeks lead time to stuff a flyer.
- ? Mall marquees are a good way to promote the event.
- ? Banners at the event with the sponsors’ logos are what the sponsors want to see. Send them pictures and follow up with a thank you letter.
- ? Word of mouth among resident recyclers is an excellent promotional tool. Make sure there are posters at all the recycling centers.
- ? In rural areas, word of mouth and posters in local restaurants are very effective.
- ? Print flyers in multiple languages in multi-cultural communities help ensure adequate coverage.
- ? If you are placing a flyer in the newspaper, use the Saturday issue. The Sunday issue is usually already full of advertisements.
- ? Follow up on any press releases with personal phone calls to the relevant reporters.

Surveys and Data Collection

Participants should be surveyed so that basic data can be collected about them and about the characteristics of your event. The National Electronics Product Stewardship Initiative has developed a “standard” survey it would like all collection programs to use. This helps create consistent data across the country. Copies of the surveys are in the appendix.

Event Feedback

Before volunteers and staff leave for the day, take a few minutes to review the event while it is still fresh in everyone’s mind. Make a list of what worked and what needs improvement for the next event. Also make sure that sponsors and volunteers are properly thanked in follow up press releases. One of the most effective ways to get people to volunteer for or sponsor an event again is to thank them. A hand written note with some specific comments is also a nice touch.

APPENDICES

Listing of Markets

Sample Site Layout Map

Volunteer Letters

Flyer and Press Release

Surveys

Electronic Equipment Markets/Buyers

Nonprofit	Company name	State	Phone	Fax		Cc
	& Community Enhancement 4351 Broadway, Oakland 94611	CA	510-428-2493	510-547-0884		
	A & B Recycling, Inc.	GA	706-866-7098	706-866-7068	abrecy@aol.com	
	A & G Electronics, Inc.		508-799-5203			
	A. Shapiro & Sons	MA	413-663-6225	413-663-6527		
will pay	AAA Environmental, Inc.	IL	847-583-1215	847-583-1317		
	Aardvark Computer Service Ltd.	CO	303-447-3457			
	Aarwin, Inc.	NY	607-733-6666	607-733-3043	aarwin@aol.com	John
	Ablolute Crcyclling	CT	203-932-2422	203-932-3595		
	ACT Computer Technology, Inc.	TX	512-476-8668			
	Action Computers	CO	303-759-1668			
	Action Computing Solutions	VA	703-502-7986	703-502-8624		
no fee	Action Recycling Center	CO	303-424-1600			
	Adherent Technologies, Inc.	NM	505-298-8662	505-298-8287	102546.1234@compuserve.com	
	Advanced Electronics		508-885-5545			Richz Peloc Wilm Dave
	Advanced Env. Recycling Corp.	PA	910-426-6172	910-426-2658		
	Advanced Environ. Recycling Co. LLC		800-554-2372			
	Advanced Recovery	NJ	973-450-9797			
	Advanced Recovery	NJ	201-450-9797	201-450-8779	visitus@advancedrecovery.com	
	AdvancedTech. Solutions, Inc.	NY	718-780-2120	718-780-4452		
	AERC	NJ	973-691-6108	973-691-7326	igresk@aol.com	
	Affordable Business Technologies	VA	703-212-2030			
	Alachua Freenet Recycle Prog.	FL	352-955-7552		joelb@afn.org	
	Alameda Cty. Comp. Resource Cen	CA	510-434-1325			
	Alco Refiners	NY	516-491-3041	516-491-3067		
	Aleph Electronics	CA	510-895-8938			
	Alion Computer	CT	203-854-9446	201-724-6557		
	All Tech Computer Recyclers	CA	310-782-0970	310-782-0864	AllTech@aol.com	
nonprofit	Allied Computer Brokers	MA	978-521-5919	978-521-5918		
nonprofit	Allied Computer Brokers	MA	978-521-6511	978-521-5918	allied3@mva.net	Jeff S
nonprofit	Allied Computer Brokers	MA	978-521-5919	978-521-5918		Rick
	Allied Electronic Recovery	CA	510-441-0500	510-441-0505	andre@AERXchange.com	
no fee	Alpha Institute	CO	303-343-4114			
	Alta Resource Mgmt. Service	MA	800-730-2582	413-734-3399	alta@alta-companies.com	
	Altech-Houston	TX	713-680-9325			
	America II Electronics, Inc.	FL	813-573-0900	813-571-2028	bgruber@aiie.americaii.com	
	American Plastics Council					
	American Recycling Company	OH	216-341-4141	216-341-4551		
	Amion Metals	NY	212-742-1043	212-227-4028	amion@aol.com	
	Anita Comer	CO	970-834-2898			
	Another Byte	AZ			mailto:abyte@infomagic.com	
	Asian Export	MA	617-332-7929	617-969-1761		
	Asian Export Material Co.		617-332-7929			
	Asset Management Consultants	TX	512-478-1799	512-496-9347	mlowe@itrade-s.com	
fee	Asset Recovery Corp.	MN	651-602-0789	651-602-0202		Cort

	Asset Recovery Corp.	MN	612-641-0789		
no fee/typ	Atlas Metal & Iron	CO	303-825-7166		
	Automation Resource Information	VA		701 S.Courthouse Rd.,Arlington,22204	
	B F I Auburn Hauling		800-51-5584		
	B F I Tyngsboro		978-649-7564		
	B. Peters Associates, Inc.		410-662-6380		
	Back Thru The Future Micro	GA	770-448-0535	customersupport@backthruthefuture.c	
	Baker Street Resources	GA	888-669-8969	770-451-0801	Cliff \
	Baker Street Resources	GA	770-234-9260	770-451-0801	cliff.bakerstreet@home.com Cliff \
	Baytronics	FL	813-237-0863		
	BC Computers	CO	303-651-7433		
	BDS Computer Brokerage LLC	OK	405-947-6703	405-947-6707	
	Benton Foundation	CO			www.community.computers.com
	Berger & Company		401-723-7240		
	Bloominton Lakeville Appliance	MN	612-469-2435	612-469-2436	
	BMEx	WI	608-365-8835	608-365-9345	
	Boston Computer Exchange		Cliff Walker	Cliff Walker	
	Boston Computer Exchange	MA	617-542-4414	617-542-8849	msa@bcs.org Cliff \
	Brenner Iron&Metal Company	NC	336-725-8333	336-721-4734	Mike
	Bristol Resource Recovery	CT	860-585-0419	860-585-9875	
	C & D Salvage, Inc.	NC	704-857-8711		Billy
	C & H Metals & Salvage, Inc.	NC	336-228-8995	336-227-9505	Stan
	C E C Enterprises		978-251-0373		
	C K Appliance Recycling		800-679-5551		
	C&L Scrap Metal, Inc.	NC	828-397-7493	828-397-7495	Robe
	C. E. C. Enterprises	MA	508-251-0373	508-251-4521	
	c/o PWM Associates				
no fee	Carolina Environmental Ass.Inc.	NC	336-229-0058	336-229-0204	Mich:
	CDB Systems	CO	303-444-7071		
	Center, EIPP				
	Century Env . Of Tampa,FL		888-446-2144		
	Century Env. Services & P-3 Inc.	NC	704-588-7426	704-588-7434	Dave
	Cerplex	CA	760-839-9320		
	Chemetco	NC	704-377-6835	704-377-0175	John
	Chero Resources LLC	NY	212-753-9730	212-826-0906	102152.1344@compuserve.com
	Children's Choice	VA	540-943-8151		
	City Industries, Inc.	TX	214-421-5406	214-428-3180	fjlr@airmail.net
	Cleanlites Recycling of SC	SC	864-597-1566	864-597-1552	Denr
	Closet				
	CMI/Compucycle	TX	713-869-6700	713-868-3203	cmi1@flash.net
	Cohen & Green Salvage Co., Inc.	NC	910-483-1371	910-483-2538	Mich:
	Collins Metal Co.	NC	828-245-2366		Allen
no fee	Colorado Materials Exchange	CO			www.colorado.edu/care/COMEX
	Colt Recovery Group		603-880-6800		
	Colt Refining Inc.	CT	203-466-2658	203-486-2000	
	Community Resource Center	OH	513-351-7696		
	Community Resource Mgmt.	MA	781-598-6003	781-598-6003	
	Compaq Computer Corp.		603-746-8327		
	Compaq Factory Outlet	TX	713-374-7033		
will pay	Component Recycling, Inc.	UT	801-725-7171		Antho

	COMPREENEW Corporation	MI	616-866-3100	616-866-3400	info@comprenew.com	Stodi
	COMPREENEW Corporation	OH	614-274-1440	614-274-1386	info@comprenew.com	
nonprofit	Computer Equal Start Education P	CO	970-2434647	970-243-6654		
	Computer Management Int'l.	OH	216-398-1922	216-398-0651		Kevir
	Computer Media	CO	800-969-4268			
	Computer Place	KY	606-878-0900			
	Computer Reclamation, Inc.	MD	301-495-0280	301-588-5408	chapman@tnt.org	
	Computer Recyclers	MN	612-920-0850			
	Computer Recycling	NJ	609-234-6156	609-234-5809	cranmer@voicentet.com	
	Computer Recycling & Refining	CT	203-488-0535	203-483-7353		
	Computer Recycling Center	CA	408-327-1818	408-327-1801	markh@crc.org	
	Computer Recycling Center	PA	412-268-8609	412-268-8192	retread@andrew.cmu.edu	
	Computer Recycling Consortium	OH	216-687-1166	216-574-6166		
	Computer Recycling Project	CA	415-695-7703		dale@wco.com	
	Computer Renaissance	IL	708-528-4788			
	Computer Renaissance	VA	703-823-5455			
	Computer Renaissance	CO	303-938-4034			
	Computer Reuse & Recycling	TX	512-708-9872	512-708-9875	jdporter@point.net	
	Computer Re-Use Network(CoRN)	SC	803-889-8247			
	Computer Services, Inc.	PA	215-387-5379	215-387-6362		
	Computer Solutions & Electronics	NH	603-895-1400	603-895-6924	sales@csande.com	
	ComputerRecycling forEducation	TX	210-366-3412	210-341-1572	mrhodes@salsa.net	
	Computers & Education and	CA	707-570-1190	707-570-1192	stevew@crc.org	
	Computers & You	CA	415-922-7593	415-922-0756	cryinfo@glide.org	
	Computers 4 Kids, Inc.	CT	203-591-1714	203-591-1730	mcfadd@c4k.org	
	Computers for Africa Project	NY	212-608-2150	212-374-9763		
nonprofit	Computers for Community	CO	720-859-0325		10255 E.25th Ave.Unit I	Wm.
	Computers for Learning	D.C.	888-362-7870			
	Computers, Inc.	IL	630-495-2081			
	Conigliaro Industries		508-872-9668			
	Conigliaro Industries	MA	508-872-9668	508-653-6672		
	Conway Metals	MA	781-447-2534	781-447-2534		
	Conway Scrap Metal		781-447-2534			
	Creative Recycling Systems	FL	813-621-2319			
	CRECER	TX			dduester@smart1.net	
	CTBI Company	TX	210-590-0252	210-599-2057		
	Curtis Park Community Center	CO	303-295-2399,ext.214			
	Cyber Trash	CO	707-792-0482			
	D.H.Griffin Wrecking Co.,Inc.	NC	336-855-7030	336-855-9309		Robe
	Daavis Memorial Goodwill Ind.	DC	202-636-4225	202-526-3994	dmgicomp@aol.com	
	Dale Wein Communications	OH	216-741-1219	weincellar@aol.com		
	DallasComputerLiteracyProgram	TX	214-746-4888	214-746-4889		
	Datasafe Shredding & Recycling		508-587-0900			
	Dayton Microcomputer Assoc.	OH	513-229-3657			
	Dell Factory Outlet	TX	512-728-5656			
	Detwiler Foundation	CA	619-456-9045	619-456-9918	diana@detwiler.org	
	Dexis Corporation	MN	612-944-7670			
	DigiQuest Learning Center	CA	415-256-8958	415-457-8095		

	DiskProject								
	DMC Electronics	NH							Rich
	DMC The Electronics	NH	603-772-7236	603-772-5420					Camj
	DMC The Electronics Recycle Co	MD	800-347-5560	603-772-7236					Gary
	DMC-The Electronic RecyclingCo	MD	301-582-6190	301-582-6259	info@dmcrecycling.com				Gary
	DMC-The Electronic RecyclingCo	NH	603-772-7236	603-772-5420	dmerc@tiac.net				
	Dove Data Products	SC	803-665-7678						
	DRAGnet-RE PC	MN	612-378-9796	612-378-9794					
	Draper/Lennon, Inc.	NH	603-229-1600	603-229-1960					
	E D R, Inc.		888-WRECKME						
	E. L. Harvey & Sons		800-321-3002						
	Eagle Computer Tek,Inc.	CO	970-224-2868						
	Earth Protection Services, Inc.	AZ	800-414-0443	602-353-9285	recpro@cyberhighway.net				John
	Earth Protection Services, Inc.	TN	615-376-9076	615-376-2728					
	Earthworm		617-628-1844						
	East West Education Dev. Fndn	MA	617-442-7448	617-442-7228					Wayr
no fee	East West Education Dev. Fndn	MA	617-261-6699	617-261-6644	ew edf@ix.netcom.com				
	Easter Seals Assistive Tech.Ctr.		800-922-8290						
	Eco-Cycle, Boulder	CO	303-444-6634						
	ECOFLO, Inc.	NC	336-855-7925	336-855-4146					Ken I
	EcoMedia	CA	800-359-4601						
	Ecoplast/WesternGoldThermoplastics	CA	213-235-3387						
	Ecosource Corporaation	CA	202-590-5730	909-590-5677					
	ECS	NC	336-851-1113	336-854-1664	sburns4744@aol.com				
	ECS Dallas	TX	214-388-6303		jidine@ecsrefining.com				
	ECS Refining	NC	336-851-1113	336-854-1664					Steve
	ECS Refining	CA	408-988-4386	408-988-3776	jtaggart@ecsrefining.com				
	EDR	NH	603-437-3370	603-437-2993					
	Educational Assistance Ltd.	IL	630-690-0010	630-690-0565	scholar@eduassist.org.				
	Educational Inst.Partnership Prog.	VA			Automation Information				
	Electrochemicals, Inc	MN	612-479-2008						
	Electronic Orphanage	NH	603-627-9885	603-228-2973					
	Electronic Recovery, Inc.	MN	612-338-2466	612-338-3834					Vladi
	Electronic Recyclers	MA	508-842-3612	508-842-3612	recyclers@wn.net				
	Electronic Surplus Services		603-624-9600						
	Electronica	RI	717-875-2862						
	ElectronicRecoverySpecialist,Inc	IL	847-583-0800	847-583-0840	ersgold@aol.com				
	ElectronicResourceRecovery,Inc.	NY	914-561-1900	914-561-4122					
	ElectroniCycle, Inc.	MA	800-829-5082	508-885-5533	dick@electroniccycle.com				508-4
	Encore Images		800-868-4568						
	Englehard West	CA	800-779-4873	714-779-6210					
	Enos Metals		508-824-5425						
	Envirocycle, Inc.	PA	717-879-2862	717-879-2008					Greg
	EnviroCycle, Inc.	NC	800-337-2420						
	EnviroCycle, Inc.	PA	570-879-2862	570-879-2008	gvoorhees@matcogroup.com				
	EnviroLight & Disposal, Inc.	FL	813-556-2770	813-556-2772					
	Environmental Elec. Recyc.?	FL	813-249-0608	813-249-1233	qsenviron@aol.com				
	Environmental Recycling Altern.	NC	336-869-8785	336-869-4940					Greg
	Equipment Services	PA	610-691-4410	610-691-5110					

	Extras for Education	CO	303-823-9460		
	F & M Bay Electronics Co.	FL	813-621-8870		
	Facility Operating Committee				
	Farmstead Asset Mgmt.Serv.LLC	NJ	732-885-8609	732-885-8616	aangerjr@worldnet.att.net
	Federal Bureau of Prisons		ext.329		
no fee	Floppies for Kiddies/Recycled	LA	504-898-2158		USA CityLink Project
	FOIL;S, Inc.	NC	704-455-5134	704-455-5150	
	formerly TH Electronics				
	Fox Electronics	CA	408-929-4369	408-929-4373	
	Franklin Smelting & Refining	PA	800-523-3416	215-634-6133	
	Free Bytes NP, Inc.	GA	404-364-2136		freebytes@mindspring.com
	Fry's Electronics	CA	408-487-4500	408-487-4700	
	Full Circle		800-775-1516		
	Gaia Strategies	NY	718-941-9535	718-941-9529	
	Gianco Ltd.	NY	516-491-5800	516-491-5878	
	Gifts in Kind America	VA	703-836-2121	703-549-1481	Product Donations
	Gifts in Kind International	VA	703-299-7538	703-549-1481	dbryant@giftsinkind.org
	Glisson Enterprises, Inc.	NC	252-758-2548		
	Global Investment Co.	FL	813-620-1507		
	Global Recycling Technologies	MA	781-341-6080	781-341-6088	
nonprofit	Global Technology Foundation	CO	303-440-1155		
	GlobalRecyclingTechnologies,Inc	MA	781-341-6080	781-341-6088	
	Goldsmith Group	IN			
	Goldstein Scrap Metal	MA	508-754-5711	508-754-8577	
nonprofit	Goodwill Compuyer RecyclingCtr	PA	412-390-2353	412-481-2091	john@goodwillpitt.org
	Goodwill Ind.of Orange County	CA			
	Goodwill Industries		www.goodwill.org		
	Goodwill Industries		413-788-6981		
nonprofit	Goodwill Industries	CO	303-650-7700		
nonprofit	Goodwill Industries of St.Palu	MN	612-646-2591		
	Gopher Smelting&Refining Co.	MN	612-454-9910		
	Gordon Iron&Metal Co.	NC	704-873-9004	704-873-9999	
	Green Disk	WA	800-305-		www.greendisk.com
	Green Solutions		603-679-2483		
	Greenbriar Data Tech		978-670-8141		
	Guaranteed Plastics., Inc.	NJ	856-665—	856-665-3313	jack@scrapplastic.com
			0909		
fee	Guaranteed Recycling Experts	CO	303-477-2764		
	H & R Scrap Metal, Inc.	WI	414-353-4333		
	Hallmark Refining	WA	800-255-1895		tim@hallmarkrefining.com
	Hamos USA	NC	704-684-4910	704-654-0957	hamosusa@mindspring.net
	Hamos,USA/LAA, Ltd.	PA	215-848-1207	215-848-1456	
	Handy & Harman Refining Group		508-226-1000,ext.640		
	Handy & Harmon Refining Group	CT	860-282-0003	860-282-7461	john.bullock@Handy.com
	Handy&HarmanRefiningGroup,In	RI	401-726-2299	401-722-3721	pjaustin@aol.com
	Hess Technologies	NJ	732-254-1404	732-254-4034	daviszimet@hesstech.com

Caro
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Conn

Richz

Steph

Craig
Jann

Wayr

HESSTECH,LLC		732-254-1404		
HOB International, Inc.	IL	630-231-6540	630-231-6641	chill@hobi.com
HOB International, Inc.	TX	214-951-0143	214-951-0144	cboswell@hobi.com
HP Product RecyclingSolutions	CA			http://resmowwww.rose.ph.com
Hudson Valley Materials Exchg.	NY	914-255-3749	914-255-4084	
Huron Cty.Solid Waste Facility	OH	419-668-8219		
ICS Plastics Inc.	NY	716-691-0363	716-691-4065	
IndustrialMaterialsExch.Service	IL	217-782-0450	217-782-9142	
IndustrialRecyclingServices.,Inc.	NJ	973-584-8859	973-584-8728	lsroman@industrialrecycling.com
Inter Recyycling, Inc.	TX	409-756-6004	409-756-6034	
Interhelp	VA	703-370-0008	703-751-6528	pcrecycle@interhelp.com
Intermediate Processing Facility		413-545-0618	ext.1	
Int'l.Assn.Electronics Recyclers	NY			Peter
Jack's Recycling & Salvage Co.	FL	904-448-2464	904-448-5235	www
JapanTechnicalInformationCent.	VA			775 S. 23rd St., Arlington 22202
JerichoRoad/Coop.Computer	TN	901-763-3886		
Johnathon Kolber		303-652-2463	cell w/voice mail	303-817-1050
Joy Recovery	IL	630-978-0100	630-978-7242	
K T I of New England		617-242-7746		
Kaska Corporation., Inc	NJ	908-651-0956	908-651-0957	USAKosca@pluto.skyweb.net
Kidsource Online	CA	408-253-0246	408-253-7391	
L&M Technical Recycling Co.	OH	216-724-6464	216-724-4445	
LA Shares	CA	213-485-1097	213-485-9237	
LaCasa de Don Pedro.,Inc.	NJ	201-483-2703	201-483-5284	edison@lacasa-tic.org
Lacerta Group, Inc.		617-442-3111		
Lakewood Electric Co.	NJ	732-363-4390	732-363-2990	
Lazarus Foundation	CA	805-563-1009		
Lazarus Foundation	MD	410-740-0735		Dale@wco.com
LibertyNet	PA	215-387-6440	215-382-2333	
Lighting Resources, Inc.	AZ	800-572-9253	602-276-5432	Ben I
LongIslandArtsCouncil at Freeport	NY	516-223-2522		
LongIslandCityBus.Dev.Corp.	NY	718-786-5300	718-786-4356	inwrap@hotmail.com
Longmont Lutheran Church	CO	303-682-9606		Bob I
Louis J. Horman Metals	OH	800-589-2586		
Lucent Technologies		603-433-2223	ext.200	
Maine Scrap Metals Inc.	IL	708-824-3175		
Makin'Time	CO	664-1448		
Marin Computer Resource	CA	415-454-4227	415-454-8238	
Center				
Maryland Recyclers Coalition	MD	Annapolis	21401	
Mass.Dept.Environmental Prot.	MA	617-292-5962	617-5656-1049	robin.ingenthron@state.ma.us
Materials Processing Corp.	MN	612-682-7362	612-681-8106	
Mercury Refining Company	NY	518-459-0846	518-459-2334	dbcohen@aol.com
Metals Reclamation Services	CA	408-723-8528	408-266-0916	Gran
Metech International Inc.	CA	415-344-9963	415-344-9967	joepo@ix.netcom.com
Metech International, Inc.	RI	401-568-0711	401-568-9860	bslier@metech-arm.com
Micro Metallics Corporation	CA	408-998-4930	408-998-5033	
Mid	MA	508-675-7831	508-675-2900	
Mid City Auto Resources		508-675-7831		
MidCityScrapIron& Salvage,Inc.		508-675-7831		

Mills Used Auto Parts		800-962-4100		
Mindshare		617-787-7870		
Mindshare Collaborative	MA	617-783-0730	617-787-1636	
Ministry				
MKR Data Resources	NH	603-888-8015		
MN Office of Environmental Asst.	MN	612-215-0242	612-215-0246	
Morgan Memorial Goodwill Ind.		617-541-1493		
Mosaic Technology Corp.		603-898-5966		
Motor City Computer Services	MI	248-253-0111	248-253-0167	kstolicker@inacommotorcity.com
MUSIC Computer RecyclingProg.	OH	216-244-5604	216-244-5606	
N. Amer. Technology Exchange	CO	303-443-1984		
N.A. Nichols, Co., Inc.		978-388-9639		
N.American Technology Exchg.	CO	303-443-1984		
Nacomex USAA Inc	NY	800-622-6639		
NAEIR	IL	309-343-0704		
National Cristina Foundation	CT	203-967-8000	203-406-9725	NCF Yvett
National Ed.Tech. Initiative	CA	818-780-3344		Jay Samit or Gene Burns Jay /
National Recycling Coalition	VA	703-683-9025	703-683-9026	
National Systems		508-226-5541		
Nat'l.Dir.,Computer Recycle Prog		www.microweb.com/pepsite/Recycle/recycle-index.html		
Nat'l.Polystyrene Recycling Co.	CA	909-736-7040		
Nesar Systems	PA	724-827-8172	724-827-2811	
NETI Initiative	CA	818-780-3344		
New Aage Plastics	FL	954-948-0156		
New York MacUsers Group	NY	212-473-1600		
Newtech Recycling, Inc.	NJ	732-469-9774	732-469-8943	
NICR		727-523-2000		
NICR	CA	714-043-9620	714-443-9724	
Nonprofit Computer Connection	MA	617-728-9151		tdc@igc.spc.org
Non-Profit Computing, Inc.	NY	212-759-2368		npc@igc.org John
Non-Profit Computing, Inc.	NY	212-759-2368	212-759-2368	german63hotmail.com
Nonprofit Services	CA	510-601-8997		
Noranda, Inc.	RI	401-438-9220	401-438-1237	cianciaj@sampling.noranda.com
NorthCoastComputerRecyclling	OH	216-261-4634		OrbitalRes@aol.com
Northeast Ind.Waste Exchange	MD	410-280-2080	410-280-0025	
Northern Telecom Material Recl.	NC	919-687-3903		
Northwest Coalition4 Better Schl	CO	303-764-6875		
NRC website				
O.C.Stafford Electronic	NC	336-274-9917	336-274-9917	Ozzi
Oak Ridge Nat'l.Recycle Center				
Oliver Trading, Inc.	SC	803-917-1777	803-779-3055	oliver@conterra.com
Omni Computer Products		800-748-6664		
Onstar Business Corp.	CA	604-582-8087	604-589-8211	info@electronics-recycling.com .com
Oxford Metals, Inc.	IL	312-483-9300		
P.Freedman Company		617-884-6571		
P.R.I.D.E., Inc.		508-824-1110		
P-3, Inc.		813-707-8887		
Patterson Education Fund	NJ	201-881-8914	201-279-0059	
PC Brokers	CO	303-449-2267		
Peerless Castings		856-365-1141	856-365-1941	thesuperscraper@aol.com

	Performance Reclamatin	OH	937-667-9444	937-667-9444	
	Peripherals Mfg., Inc.	CO	800-468-6888		
	Phil.Area Compyuer Society	PA	215-951-1255	215-951-7488	
	Philip Environmental	PA	412-244-9000	412-244-9100	
	Philip Lewis & Sons		617-442-1250		
	Philip Services	PA	412-594-2829	412-594-2746	jyoung@philipinc.com
	PhilipServices Corporation	FL	813-875-4600	813-872-1567	
	PHL International Corp.	WI	414-884-9766	414-884-9788	
	Phoenix Project	MD	410-750-2435	410-492-5213	asilver@erols.com
	Planergy, Inc.		800-527-7648		
	Polycycling of California	CA	714-646-7879	714-646-7879	polycycling@worldnet.att.net
	Practical Computer, Inc.	VA	703-321-3003		
	Print Recovery Concepts		207-642-9700		
	Proactive Environmental R&D	GA	770-425-9733	770-425-0628	
	Proactive Environmental R&D,Inc	TX	713-690-8210	713-690-3224	
	Product TakeBack Services		978-670-4700		
	Product Takeback Services	MA	781-275-5560	781-275-6312	
	Project Y.E.S.	CA	415-861-8232		
nonprofit	Providers'ResourceClearinghous	CO	303-296-8580		
	Public Service Elec.&Gas Co.	NJ	973-430-8244	973-596-9201	afraling@pseg.com
	R. Frazier, U.S.,Inc.	TX	512-491-6451	512-339-1327	jzeigler@rfrazierus.com
	R. Frazier, U.S.,Inc.	VA	540-387-3799	540-387-1180	
	R.KellyFreedman&Son,Inc.		518-273-1141		
	R2 Reuse Centers, Inc.	IL	708-482-0154		
	Raeford Salvage Co., Inc.	NC	910-875-3480	910-875-3109	John
	RDR Electronics	CO	303-790-1830		
	Recycled Computer Systems	CO	303-651-9159		
	RecycleNet Corporation	NY	519-767-2913		http://www.recycle.net
	Recyclights, inc	MN	800-831-2852	612-948-0626	jhughes@recyclights.com 612-9
	Recycling Company				
	Recycling Division				
	Recycling, Inc.				
	Recyclling, LLC				
	Red Hill Corp.	PA	717-337-3038	717-337-3936	Artur
	Rentex, inc.	MA	800-545-2313	617-482-9415	
	Resource Concepts, Inc.	TX	972-243-3121	972-243-2647	ahs@resourcecon.com
	ResourcesForEnvironmt.Mgmt.	MA	508-263-7705	508-263-4808	
	Retrofit,Inc.	MN	651-766-7422		www.retrofitcompanies.com
	ReUse Industries	OH	614-698-8200	614-698-4014	reusse@eurekanet.com
	Reused Goods	NY	516-223-2522	516-223-6991	
	Robin Hood Foundation	NY	212-227-6601		
	Rockaway Recycling	NJ	201-625-	201-625-9216	
			9560-		
	Rocky Mountain Recycling	CO	303-288-6867		
	Rocky Mountain Recycling	CO	303-288-6867		
	Roger Meyer, Enviro-Chem	MN	612-428-4002		
	RST Computer Services	NH	603-595-8708	603-889-5250	
	RST Reclaiming Co.,Inc.	MA	508-453-3425		
	Rumarson Technologies Inc.	NJ	800-929-0029		
	Rumasian Technologies, Inc.	NJ	800-784-8723		

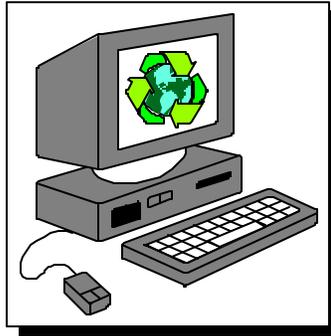
	Rustec, Inc.	NJ	609-635-1927	609-635-1325		
	S.E. Public Service Authority	VA			jthomas@compusesrve.com	
	S.Holroyd & Associates	CA	415-674-8541	415-674-4080	holroyd@well.com	
	S.Swartz & Sons, Inc.	NC	919-682-0429	919-682-3596		Jose
	Salesco Systems USA, Inc.	AZ	800-368-9095	617-344-1271		Jame
	Salvation Army		413-785-1921	,ext.116		
	Samir Ahmed		070-224-2868			
	Sandhills Recycling Co.	NC	910-944-5601	910-944-5601		Walt
	Sanger Sales	CA	408-288-5308			
	Science & Technology Center	CO	303-651-1151			
	SCROUNGE	PA	814-863-7688		scroung9@psuvm.pus.edu	
	Second Chance Program	VA	703-246-4542	703-591-6442		
	Secure Environmental Electronic Service & Development	FL	813-621-8870			
	Severson Scrap Metals, Inc.	WI	608-222-4604			
	SGS Computer Corporation	OH	216-786-8111			
	Shelter Hill Comp.LearningCenter	CA	415-383-1577	415-383-4726		
	Silver Anvil Engineering Corp.	CO	303-755-1810			
	Silver Group	IL	815-544-9221			
	Sipi Metals Corp.	IL	773-276-0070	773-276-5168		
	Smart Valley, Inc.	CA	408-562-7707	408-562-7677		
	Source Management, Inc.	CO	303-964-8100	dial 0		
	Southeast Recycling	TN	800-337-2420	800-648-3053		Beve
	Southern Resources, Inc.	NC	704-342-1696	704-373-1934		Mich:
	Space Fitters, Inc.	CT	800-734-2209	860-290-8057	slaterj@spacefitters.com	
	Spring Lake Equipment	MN	800-826-2196			
	Stateline Recycling, Inc.	WI	608-754-7715			
	Steve Randall & Co.	CA	916-988-6300	916-988-6399		
	Summit Recycling Center	CO	668-5703			
	Superior Salvage & Parts	CO	303-494-5605			
	Superior Special Services	AZ	602-233-2955	,ext.24		Joe Z
	SuperiorSpecial Services, Inc.		781-341-6080			Stepl
	Supply Solutions, Inc.		781-729-2000			
	Surplus Buyers	TX	888-413-3180			Larry
	System Service International	IL	708-547-6150	708-547-6232	jadelee@ssisystem.com	
	Target Development	MA	401-433-4510			
	Teaknor Apex	CA	626-968-4656			
	Teaming for Technology	CO	303-561-2328			Anjar
	Tech Recycling, Denver	CO	303-696-7350			Bob I
	Techneglas, Inc.	PA	717-883-2845	717-883-2511		
	Technelas, Inc.	OH	614-445-4789	614-445-4840		
fee	Technology Recycling Consults.	CO	303-766-9608	303-766-4453	800-803-5442	Bob I
	TechnologyInvestmentRecovery,I	NY	212-665-0184	212-663-8766		
	TechnologyRecyclingConsultants	CO	303-766-8580			
	Tecnotes	NY	516-725-2006	516-725-1714	sales@tecnotes.com	
	TecsChange		617-442-4456			
	Teledyne Brown Engineering	TN	423-482-8040	423-482-0940	teledyneor@icx.net	
	Texas Metal Recyclers	TX	713-933-3333	713-690-6076		
	TH Electronics	CO	303-482-9310			
	The Colorado Materials	CO	303-492-4330			

Exhgange					
The Doe Run Co.,Resource	MO	573-626-3476	573-626-3304		Louis
Tombarello Recycling	MA	978-682-5226	978-686-6484		
Tombarello Recycling, Inc.		603-474-8821			
Total Reclaim, Inc.	WA	206-343-7443	206-343-7445	clorch@totalreclaim.com	
Transformer Salvage, Inc.	NC	919-731-7732	919-736-3348		Woor
TRC		877-770-8234			
TRI Recycling, Inc.	TX	512-708-1200			
Triangle Recycling Service	NC	919-740-9912			John
Tryonics, Inc.	NH	603-926-1122	603-929-4893		
Tung Tai Group		877-886-4824	650-685-7200		John
Tuscon Metro.Ministry Comm.	AZ	602-322-9557			
U.S.Depaartment of Justice,	CA	510-833-7500	510-829-0922		
Unicor Federal Prison Industries	OH	330-424-7748,	ext.1313		Aaar
Unicor Federal Prison Industries	OH	330-424-7748,	ext.1313		
United Datatech	CA	408-998-0700	408-998-0900		
United Metal Recyclers	NC	336-996-2241	336-993-3064		Frank
United Metal-D>H>Griffen	NC	919-989-6666	919-989-6619		Chris
United Recycling	IL				
United Recycling aka					
United Recycling Industries,Inc.	IL	630-665-1919	630-665-3105	dstoecklin@aol.com	
United Recycling Industries,Inc.	IL	847-455-8800	847-455-3232	rglavin@msn.com	
United Refining & Smelting					
USA City Link Project	LA	504-898-2158	504-892-8535		
Vermont Republilc Industries		802-524-6055			
Vermont Retroworks/ACCAG	VT	802-388-3608	877-292-9326	retroworks@mall.com	
Virtually Wired		617-542-5555			
Vision Computer Remarketers	MA	800-242-5524			
VP Electronics. Inc.	CA	408-435-8400	408-435-8530	VP Electronics@emain.msn.com	
Wade Environmental Industries	NJ	609-767-2760	609-767-0698	wadeenviro@aol.com	
Waste Management	NY	518-841-4248	518-843-2230	Peter Bennison@WMX.com	
Waste Management-Recycle America		716-626-1700			
Waste Mgmt.,Inc.-Asset Rec.Gr.	NC	336-996-5500			Cath
Waste Mgmt.of Raleigh-Durham	NC	919-4052440	919-544-9437		
Waste Not Recycling	CO	800-584-9912			
Waste Not Recycling	VA	703-787-0200			
WCS Company	CA	805-486-8434	805-486-8523		
Wellesley Recycling&Disposal		781-235-7600,	ext.342		
Wesbell Asset Recovery Center	NC	919-687-3900	919-687-3925		Gary
West Pacific Industries	CA	213-722-0751	213-722-0751		
Westminster Rotary Club	CO	303-460-8571			Gart
Wilsonart International	TX	254-207-7000	254-207-2545		
Windfield Alloy, Inc.	MA	978-869-2470	978-975-1640		
Windfield Alloy, Inc.		978-689-2470			
WM Recycle America	CA	510-563-4214	510-563-4210		Kevir
Women'sEnvironment&Dev.Org.	NY	212-973-0325	212-973-0335	wedo@igc.apc.org	
Wyse's Technology	CA	408-922-4333			
Youth For Service	CA	415-621-5555	415-431-3389		
Zeos-Division of Micron	MN				3775
		800-554-2372	610-797-7696		Bonn

AZ 602-254-3192 602-254-3193
GA 404-505-7967 404-505-7966
ext. 41
800-274-7846 www.cristina.org

ext.1948
ext.21
201-482-8312 201-482-1883
ext.107
ext.308
NY 973-884-2282

Volunteer Letter



Dear _____

How many old computers do you have stacked in closets, hidden away in the basement or sitting on garage shelves? Multiply that times all your neighbors and that gives you an idea of how many retired computers that are out there just waiting to be productive members of the e-world.

EcoCycle is looking for volunteers for a one-day collection event occurring in Broomfield Saturday, **November 18th** from 8:00 am to 1:00 pm. As you'll recall from managers' meeting, Eric mentioned that we'll need to have EcoCycle staff available to help that day.

For this occasion, we need a total of 50 volunteers, divided into two shifts of 25. The first shift will be from 7:00 am to 10:30 am. This includes a 30 minute volunteer training and 30 minutes of set-up, prior to the event starting at 8:00 am. The second shift will run from 10:00 am to 1:30 pm. This includes a 30 minute training and 30 minutes of clean-up. Beverages, breakfast, lunch and snacks will be provided. Following is a breakdown of the volunteer positions to be filled each shift:

- ? **4 Greeters** – Welcome participants, help residents fill out surveys, and take money
- ? **2 Entrance Traffic** – Safely direct traffic off street and into unloading area
- ? **4 Experts** – Determine condition of computers (usable, salvageable, scrap, etc.)
- ? **8-10 Unloaders** – Unload computer equipment from cars
- ? **2 Taggers** – Tag items according to category
- ? **2 Collectors** – Collect and coordinate paperwork
- ? **1 Exit Traffic** – Safely direct traffic out

Please contact Bryan or Gale at the Longmont office (303-772-7200) by Thursday, November 2nd to let us know if you can help at this special event. Thank you in advance for your assistance.

Sincerely,

Bryan Ukena

Volunteer Letter

Subject: Broomfield Computer Recycling Day
Saturday, November 18, 2000
8:00am to 1:00pm

Dear _____,

Thank you for agreeing to help with Colorado's first residential and small business computer collection event. Working together, we'll be able to keep hundreds of computer components with toxic materials out of our landfill. There will be a lot going on that day, so this letter will help orient you and give you some information that you will need for the event. **Remember, there will be a 30 minute training session before your shift.**

First, the basics....

Items to be accepted include:

Computer CPU's, Monitors, Keyboards, Mice, Scanners, Printers and other computer components only.

No VCR's, Appliances, Cell Phones, or other electronic devices. We are not yet equipped to handle them.

Where:

The Broomfield Recycling Center, 225 Commerce St., Broomfield
Take Hwy. 287 to West Midway St. (Target store), Turn west on Midway for 2 blocks, turn right on Nickel St. (the only way you can turn). Go approx. 2 blocks through the traffic light and across the RR tracks to Stop sign. Recycling Center is straight ahead. Park across the street from the Recycling Center (see map).

Fees for Participants:

There will be a charge of \$3 per piece to recycle computers. For example, 3 for a monitor, \$3 for a CPU, \$3 for printers or other desktop computer equipment. Mice and cables are free. The money collected will help offset the cost to recycle these items.

This cost is far below what it will actually cost to properly recycle these items. For example, it can cost \$15 to \$20 to recycle monitors. It's a great deal for everyone.

If you have your own equipment, please wait to unload it until we have some slow time during the event or afterwards.

Estimated Participation:

Other computer collection events held around the country have seen about 1% to 3% of the communities population participate.

Broomfield pop. = 41,000 x 2% participation= 820/ 2.5 people per car= 328

Cars/ 5 hours = 65.6 cars/hour or about **one car unloaded per minute**

Duties and Times:

You will be helping from ____ to ____ am Your position will be as a ____.

You will need to be at the Broomfield Recycling Center at ____ so you can be part of a 30-minute volunteer training and there will be 30 minutes of tear-down after the event.

Look for your name on the enclosed sign up sheet. If you can't help during the time you signed up, please call.

What about food and drink:

Beverages (hot chocolate, coffee, sodas and water), breakfast, lunch and snacks will be provided by Alfalfa's and Big Dog Deli.

What should I wear?

If it looks like rain or snow, bring rain-gear/warm coats. There will be inside break areas established on site and tents in case of rain or snow. Each volunteer will be provided an orange vest. Gloves will also be provided.

Where Do I Park?

Volunteer and staff parking is located across the street from the Recycling Center. See the attached map. Please don't park in the Recycling Center parking, we need all the space we can find.

Data Collection, Greeter and Collector duties:

Since this is a pilot project, data collection is very important. All greeters will be responsible for assisting participants to complete the survey. The collectors will be responsible for collecting money. A starting bank will be provided. The greeters will hand out surveys to participants prior to unloading. The completed form will be given to the collector who will make sure the correct amount is paid. The collectors will place the completed forms in the survey box at the collectors station.

Storage and Handling:

Two storage trailers will be sited for the event to keep material out of the weather. A forklift and pallet jacks will be used to move material. The material will be sorted by unloaders and placed on the tables in front of the gaylord boxes at the unloader station. Loader/packers will then tightly and neatly package the materials according to the vendor specifications.

Site plan:

See enclosed map.

Safety:

See the enclosed brochures. Gloves, eye protection, safety vests, back supports, eye wash stations and first aid kits will be available. Please use them.

Sincerely,
Bryan Ukena

This project was funded by EPA region 8, the Colorado Office of Energy Management and Conservation through oil overcharge monies, and EcoCycle.

LETTERHEAD

For Immediate Release:
DATE

Contact:
Bryan Ukena 303.772.7300
Eric Lombardi 303.444.6634

PRESS RELEASE

ECO-CYCLE GETTING THE LEAD OUT

Boulder County Recycler to Establish Home Computer Recycling Program

(Boulder) How many computers do you own that have become roadkill on the information highway? Are they stacked in closets, hidden away in the basement, stuffed behind couches or sitting on garage shelves? Haven't thrown them away because it seems so, well, wasteful? An option will soon exist to deal with those old home and small business Commodores, Data Generals and Tandys.

Eco-Cycle announced today the kick-off of the state of Colorado's first home computer community collection and recycling program, a one-year pilot project that will be jointly funded by the U. S. Environmental Protection Agency, the Governor's Office of Energy Management and Conservation, and Eco-Cycle.

Twenty million home personal computers became obsolete in 1998 alone, according to the National Safety Council, a number that will increase to 60 million obsolete PCs per year by 2005. Yet only 3 percent were saved from the landfill. "We're bringing Eco-Cycle's environmental ethic to bear on a problem no one else is targeting – residential computer discards," said Bryan Ukena, Eco-Cycle's computer recycling program manager.

Keeping computers out of landfills is the primary goal of the program. Every computer contains 5 to 8 pounds of lead as well as mercury, arsenic and other heavy metals and toxic chemicals. "When a computer is buried in a landfill, we run a high risk of the toxic chemicals contained within it eventually leaching into the groundwater," said Whitney Trulove-Cranor, of the Pollution Prevention Program at the Environmental Protection Agency's Denver regional office. "This project will begin to develop the infrastructure necessary to prevent computers, and in this case home computers, from entering the waste stream in the first place."

Resource conservation also fits into the picture. "Ninety percent of the component materials in a computer can be recycled," added Ukena. "With the rapid obsolescence of computers and components, we're seeing a significant amount of valuable resources ending up in the landfill."

The pilot project will consist of at least three one-day computer collection events scattered throughout Boulder County over the next 12 months. "We'll start in Broomfield on November 18 at the Broomfield Recycling Center, and then work our way around the county," noted Ukena. "We're planning to be in Longmont in February, Boulder in April, and

then hopefully hold a summer collection day both for east county residents and for those who live in the mountains.” No firm dates or locations have been set beyond the Broomfield collection date.

Eco-Cycle hopes to collect 80,000 pounds of obsolete computer equipment during the program’s yearlong run. “The quantity of material we collect will provide us the opportunity to learn how to make home computer recycling work,” stated Eco-Cycle Executive Director Eric Lombardi. At the Broomfield Recycling Center, home for the project, three options will be explored: marketing truckload quantities of recycled computers to end users; compiling small quantities of computers with other collectors to cooperatively market the materials; and sorting and disassembling computers to harvest marketable components (IC Boards, CD-ROMs, fans, etc.), and then marketing the remaining material to secondary buyers. These three methods will enable Eco-Cycle to determine the best approach to developing a sustainable, long-term home computer recycling program. “We’re sticking our toes in the water so we can figure this out and provide a service that Boulder County residents are asking for,” added Lombardi.

The Broomfield Recycling Center (BRC) was chosen as the project’s home because of its close proximity to high-tech companies such as Storage Tek, Sun Microsystems and Level 3. The BRC is a joint project of Eco-Cycle and the City of Broomfield. Karen Stuart, a Broomfield city councilwoman and the city’s representative on the Boulder County Recycling and Composting Authority, is excited about the opportunity: “We see this as both a great service to offer Boulder County residents, and as a way to create a synergy between our high-tech businesses and their end users.” According to the September 2000 issue of the Colorado Business Review, Colorado has the second highest percentage of PCs per household in the Nation.

Rick Grice, director of the Governor’s Office of Energy Management and Conservation, sees this effort as a way to support Colorado’s goals of becoming a future computer technology industry leader. “If we are to be a leader in the development and production of high tech computer technologies,” said Grice, “then it is incumbent upon us to also be a leader when those technologies have become obsolete or are no longer needed.”

Computer equipment to be accepted at the first collection event at the Broomfield Recycling Center will include monitors, CPUs, keyboards, scanners, printers and other computer peripherals. There will be a \$3 charge per computer component.

Survey

EcoCycle/Boulder Center for Hard to Recycle Materials (ChaRM)

Thank you for visiting the CHaRM. Your participation and support will help keep lead and other toxins out of our landfills and waterways. The ChaRM is funded by EcoCycle, the City of Boulder and YOU.

Please complete the following survey and return it to the attendant.

1. This computer equipment is from: Home_____ Business_____
2. Is the computer equipment working? Yes_____ NO_____
- Pentium grade? Yes_____ NO_____

If you answered yes to both of the above questions, ask the attendant how you can donate your equipment to the Gives Foundations.

3. Why did you choose to recycle this product today? (check one)
- Electronics are a problem for Colorado's environment _____
- The product is not working_____
- I got a newer model_____
5. Computers, T.V's and some electronics contain parts that can harm the environment if they are disposed of improperly. Who do you think should pay for making sure these products are safely handled? (choose one)
- Consumer/user _____
- Manufacturer of product _____
- Retail store _____
- Government _____
- Shared between all _____
- Other _____
6. How many computers and T.V's do you have at home? _____
7. How did you hear about this event?
- T.V. _____ Called EcoCycle_____ Flyer_____
- Newspaper_____ Word of mouth_____ Water bill_____
- Other_____

City _____, Colorado

I understand that EcoCycle may dismantle and recycle or refurbish and reuse the computer equipment that I brought today. EcoCycle cannot guarantee the confidentiality of any remaining information found on computer equipment. The equipment delivered to the collection site was generated through household or small business use and is not commercially generated waste that is subject to federal or state hazardous waste regulations. I understand that the computer equipment will be accepted in reliance on the accuracy and truth of my affirmation.

Signature_____ Date _____, 2001

Special Thanks to our Corporate Sponsors..... for this event

**Print this on the back of survey to track equipment recycled
And money collected.**

		FEES
MONITORS	_____	_____
CPU'S	_____	_____
LAPTOPS	_____	_____
PRINTERS	_____	_____
KEYBOARDS	_____	_____
OTHER	_____	_____
TOTAL UNITS	_____	\$ _____

Flyer and Press Release

