

2011 Indiana University Electronic Waste Initiatives

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Indiana University Office of Sustainability

Introduction

Definition of Electronic Waste (“e-waste”)—E-waste is best defined as any piece of electronic equipment, such as a television, cell phone or printer, which has reached the end of its useful life. E-waste disposal is a topic that affects the greater IU community and the world at large. This e-waste is either improperly or properly treated. Improper disposal methods consist of storing the waste for years in the home, disposing the waste in a landfill or giving the waste to “sham” recyclers who then export the waste to developing countries with poor environmental regulations. Proper disposal involves disposing the e-waste via drop off centers, permanent small e-waste collection programs or mass community collection events.

The Problem

Why is e-waste even an issue today? The answer to this question is somewhat complex.

Recycling e-waste is important both from an environmental health perspective and from a legal perspective.

Environmental Health Perspective—Proper e-waste disposal helps protect the environment and human health. E-waste contains extremely hazardous materials such as lead, cadmium and mercury. Cathode ray tubes, often used in computer and television monitors, may contain between 3-8 pounds of lead (Oregon Department of Environmental Quality, 2001). These hazardous materials are harmful to the immune system, nervous system, respiratory system, reproductive system, and harmful to heart function and kidney function.

If e-waste is improperly disposed and is thrown into a regular landfill that is not meant to deal with these hazardous materials, then there is the possibility that these toxic substances could

leach into the groundwater and cause harm to human and animal populations. Proper e-waste disposal can limit these detrimental outcomes.

Legal Perspective-- Proper E-waste recycling helps deter the illegal e-waste recycling market. The EPA estimates that as much as 80 percent of discarded consumer electronics in this county end up in developing countries where environmental laws and worker's health & safety laws are non-existent. "Sham" recyclers take advantage of loopholes in export laws by exploiting impoverished workers and developing countries' environmental laws in order to avoid environmental regulations in this county. These sham recyclers export the e-waste to developing countries to take advantage of cheaper labor. Additionally, these "sham" recyclers routinely harvest and sell parts and components from computers that may contain personal information. This practice is fueling a multi-billion-dollar industry of identity theft in these countries.

The Solution

As education and awareness of these harmful e-waste practices increases, many citizens and private industries have decided to become part of the solution, not the problem or the victim. The Indiana University Office of Sustainability (IUOS) has recognized the issues involved in e-waste disposal and has decided to take the lead on developing better e-waste practices. Through the Indiana University Collection Days Event, IUOS (in coordination with Apple Inc.) has helped to collect and properly recycled over 1,400,000 pounds of electronic waste.

The first Indiana University Collection Days Event took place in 2009 and resulted in a total collection of 834,216 pounds. This event took place on the Indiana University Bloomington (IUB) and Indiana University-Purdue University (IUPUI) campuses. The event involved many different campus entities and was a very successful event. In 2010, another successful E-waste

Collection Days program took place at Indiana University Bloomington and Indiana University South Bend where approximately 600,000 pounds of e-waste were collected. Although this amount was smaller than the previous year, the number of cars that frequented the event was greater than in 2009, which indicated improved awareness of the event.¹ In 2009, only attendees at the IUB and IUPUI sites were recorded. For the 2010 event, only participants at the IUB and IU South Bend site were recorded because IUPUI was no longer a partner for the event.

The remainder of this report will track the development of the 2011 event as well as recommendations for a 2012 event.

¹ 2009 had 2,006 cars attend the Public Day drop off, while the 2010 event had 3,682 cars.

Overview of Goals for 2010-2011

A majority of the foundation for the 2011 event was already laid due to the outstanding work completed by the 2009 and 2010 project teams.² The 2011 event was a continuation of these efforts. Our objective this year was to implement proper disposal mechanisms for IU and provide greater insight to the IU community about proper e-waste disposal practices. The 2010 project team analyzed the work from these previous events and came up with the following goals for 2011:

- 1) **Shift to Internal practices**—The project team decided that it would be beneficial to develop better e-waste recycling practices for the internal IT staff at IUB and other IU campuses.
- 2) **Support Student Initiatives**—the project team decided that helping to facilitate undergraduate projects regarding e-waste would be beneficial in making the IU community more aware of e-waste issues and get a better idea of overall awareness. The project team also wanted to participate in research being done by the V600 graduate courses and direct students to learn more about the overarching issues of e-waste and how it affects the IU community. This year, Susan Coleman Morse and I were able to assist several student projects regarding e-waste at IU. These student projects helped students get a more in-depth look into what goes on at the IUOS in regards to e-waste and also gave students a broader look into the overarching issues. From a personal perspective, this work also helped me as an intern in being able to understand the most important issues that will move the public to action.

² For more information regarding the 2009 and 2010 events, see *Electronic Waste Solutions* by Laura Knudsen (2010)

- 3) **IUB E-Waste Collection Program Roll-Out (“Roll-Out”)**—the project team wanted to set up a process to obtain a truck and pick-up/collect the e-waste that various departments and entities have accumulated. The IUB team was able to organize several pick-ups at IUB, IUSB, and IUPUI. Apple volunteered to send trucks to these campuses to pick up the electronic waste that had been accumulated during the months of December and January. While the total accumulation from these collections were small (usually only a few pallets), these collections of e-waste should be kept in mind when factoring the overall 2011 collection.
- 4) **Market the Roll-Out**—the team wanted to try to expand on the marketing practices from last year to improve overall IUB community exposure.

Review of Results from 2009-2010

The 2010 E-Waste Community Survey provided detailed results from the respondents of the event. Below are the highlights from the 2010 survey:

- 158 total respondents from the online survey.
- The 50-57 age class (36 respondents) claimed the majority of visitors to the event who took the survey, followed closely by the 58-65 age class (33 respondents).
- The average distance driven by respondents was 0-5 miles (87 respondents), followed by 6-10 miles (44 respondents).
- 118 respondents felt that not being charged to recycle was a very important factor in their decision to attend the 2010 event.
- Most (96 respondents) were not influenced by the fact that their family and friends recycled.
- A vast majority of respondents (136 respondents) felt that helping the environment was a very important factor in their decision to come to the event.
- A vast majority of respondents (117 respondents) felt that having a drive thru drop-off at the event was a very important factor.
- Most respondents chose newspapers as the number one factor in community awareness of the event (97 respondents).
- Most people in the community (135 respondents) are not aware of the new Indiana e-waste law.

Results from the 2011 E-Waste Event³

The estimated results from the 2011 E-Waste Collection Days Event were a combined 400,000 lbs. from the IUB, IUSB, and the IUPUI locations. IUB had over 1200 vehicles come to their event, while IUSB had over 1600 cars attend their event over the weekend. IUB filled 8 semi-trailers and IUSB filled 11 trailers.

2011 E-Waste Community Survey⁴

The 2011 event continued the tradition of the 2009 and 2010 events by providing participants with a magnet directing them to an online survey (via Survey Monkey) where respondents could indicate what factors motivated them to participate in the event. Many of the answers were consistent with the results from the 2009 and 2010 events. The highlights from the 2011 E-Waste Community Survey are as follows:

- The largest demographic of respondents to the survey were between the ages of 42-65 (roughly 56%). The age class of 42-49 constituted 19% of respondents. The age class of 50-57 constituted 22% of respondents. The age class of 58-65 constituted 24% of respondents and was the largest group to participate. These results are consistent with the 2009 and 2010 events.
- 81% of respondents came to the event to drop off personal equipment.
- 56% of respondents heard about the event via the newspaper, while 24% heard about the event from co-workers.

³ This section of the report will be amended once the final numbers are received from Apple, Inc. The current estimates and numbers included in this report are unofficial. The following numbers are estimates from the event and are subject to change.

⁴ As of May 23, 2011, 54 respondents participated in the online survey. Many more responses are expected to come but this report analyzes the results to date.

- 85% of respondents are unaware of the new Indiana law regarding e-waste.
- 77% of respondents said they knew a “moderate amount” of information about the importance of recycling electronic waste.
- When asked to rank issues based on importance, the majority of respondents felt that air pollution was a “very important” issue when compared to other environmental issues.
- 59% of respondents drove 0-5 miles to attend the event.
- 68% of respondents felt that not being charged to recycle was a “very important factor.”
- 57% of respondents didn’t care that family and friends were recycling their e-waste.
- 77% felt that helping the environment was a very important factor in their decision to recycle their e-waste.
- 65% felt that having a drive through drop-off at the event was a very important factor.
- The majority of respondents felt that the most convenient ways to recycle their electronics is by “taking them to a city/county recycling center.”

Marketing for the 2011 E-Waste Collection Days Event

After Apple notified IU that they would be interested in participating in a third E-Waste Collection Days Event, the marketing team got together in late-January to discuss the details. It was decided to host the 2011 event in May (other E-Waste events were held in April but plans to have an E-Waste event were not finalized until January 2011).⁵

Marketing Meetings

The E-Waste marketing team met a total of 7 times prior to the 2011 E-Waste Collection Days Event. The marketing team met more frequently as the event approached. On average, the marketing team met once every 3 weeks. The marketing meetings were usually led by Susan Coleman Morse, or myself, and lasted about 30 minutes on average. The attendees for these meetings ranged from 5-10 people from IU-South Bend, IU-Bloomington, IU Office of Sustainability, UITS, and Apple Inc. Agenda items were emailed ahead of time and the meetings moved fairly smoothly. The topics for the meetings ranged from logistics at the various campuses to media modes for promoting the event.

Publicity Schedule

The publicity schedule for the 2011 E-Waste Collection Event was composed by Nancy Clensy, Assistant for Special Projects, Office of the Vice President of Public Affairs and Government Relations. The schedule provided a monthly detailed schedule for the various jobs that needed to be done in order for the event to be successful. This publicity schedule was extremely helpful in providing various members from the marketing team with a streamlined list of topics that needed

⁵ The final totals for the e-waste collected should note that the event was held after the majority of the student body had left Bloomington. Had the event been held in April, there may have been an increase in student participation with the event.

to be addressed and the deadlines for these assignments. The timeline begins in February and extends throughout May.⁶

Official Indiana University Office of Sustainability Website

The official website for the 2011 Collection Days Event was <http://www.ewaste.indiana.edu/>. This website provided visitors with exact times and locations for the events being held at IUB, IUSB, and IUPUI. Along with the locations, the website also had helpful tools for visitors including a video showing the highlights from last year's event, lists of items that were acceptable and not acceptable to recycle, and links to posters and public service announcements. Business organizations could also register in advance to bring their office equipment to the event.

Indiana Poweron Website

Apple Inc. provided a website where interested visitors could learn more about the events, the locations, and issues surrounding e-waste in general (<http://indiana.poweron.com/>). The Indiana Poweron Website also contained the link for the 2011 E-Waste Collection Days Survey. The Poweron website provided links to the Indiana University and the IU Office of Sustainability.

⁶ For the full 2011 Publicity Schedule, see attached documents below.

Future Goals and Recommendations

Based on the success of the 2011 event, several ideas for promoting better e-waste practices at Indiana University were generated by the 2011 E-Waste Team.

Organization of the 2012 Electronic Waste Collection Days Event

Even though the overall totals for the 2011 event appear to be lower than last year, IU should do all they can to get Apple onboard for a 2012 event. The decrease in total e-waste collected should be attributed to the yearly success of the project over the past 3 years and not indicative of less enthusiasm for participation. It should be noted that this year's event was held in May, as opposed to April, and could have affected the overall totals.

In order to make 2012 another successful year for e-waste collection, the 2012 event should be set and tentatively arranged by late-Fall 2011. Even if this is not possible, this year proved that IU could hold a successful event even when the final plans are not determined until January. The Publicity Schedule for 2011 could easily be adapted to begin the process earlier in the academic year.

Bimonthly Pick-Up for IU Campuses

In the event that Apple is not willing to do a 2012 Collection Days Event, we can still inquire if they would be interested in helping to collect e-waste from IU Purchasing and IU Surplus at various campuses. This would still require coordination from the 2012 IU intern but would be a great way to continue the tradition of leading Indiana to better recycling habits.

Increase Participation from Other Campuses

Any potential e-waste collection events could benefit from increased participation from other campuses in the IU community such as IU Northwest. IU Northwest's increased access to medical equipment could provide a huge boost for e-waste collection.

Start the IRB Process Early in the Year

The IRB's policies for tests and surveys regarding human subjects are a very slow and exhaustive process. The new e-waste intern will have to take several hours of modules and tests in order to be approved by the IRB. They will also most likely have to do the application process all over again to get approval to hand out surveys for the 2012 E-Waste Collection Days Event. This process can take several months and needs to begin as early as possible. The new intern will need to identify who will be the Lead Investigator for the application (it will be easier to use someone who has already gone through the approval process as opposed to obtaining a new volunteer). There also is no need to add additional persons to the application process outside of the intern and the Lead Investigator. The new intern can contact me for advice on this process and the approved documents from this past event.

Provide New Policies for Interaction with Participants during the E-Waste Collection Event

If a 2012 E-Waste Collection Event takes place, new policies need to be adapted to how people interact with participants who come to the event. It would be helpful to have a small, concise statement made for the volunteers who are handing out magnets. The most effective statement to the participants revolved around encouraging their feedback in order to help IU improve on hosting the event in the future.

Conclusion

2010-2011 was another successful year for e-waste recycling. IU E-Waste Collection Days Events have become a yearly event in Bloomington and continues to expand to other IU locations in Indiana. Indiana University will continue to strive in being a leader in e-waste awareness and hopefully influence other institutions to adopt similar programs.

Appendix A: E-Waste Survey

Indiana University 2011 E-Waste Collection Days Survey

Instructions:

Please answer the following questions to the best of your ability. Participation in this survey is completely anonymous. No personal identification is required. Participation in this study is completely voluntary and you are under no obligation to complete the survey. You may skip any question that you do not wish to answer or quit the survey at any time.

The purpose of the study is to help Indiana University better understand the recycling habits of those in the surrounding community. The goal is to be able to provide local residents with better access to electronic waste disposal options. By participating, you will aid Indiana University in achieving this goal. Thank you for your participation in this study.

1. Please indicate your age.
2. Did you come to the event to drop off equipment from a local business, school, or other group? (Yes or No)
3. How did you hear about the event?
4. Are you aware of the new electronic waste law in Indiana?
5. How much would you say you know about the importance of electronic waste?
6. How important are the following issues today: Air pollution, water pollution, greenhouse gases, global climate change, pollution from electronic waste, water shortages (please rate as not important, somewhat important, or very important)?
7. How many miles did you come to recycle your electronic waste?
8. How important were the following factors in deciding to bring your electronic waste to the IU E-Waste Collection Drop-Off Event:
 - a. Factor #1: There was no charge to recycle my electronic devices
 - b. Factor #2 My family/friends were recycling their electronic devices so I decided to recycle mine as well
 - c. Factor #3: I felt like it would help the environment by recycling my electronic devices
 - d. Factor #4: The drive through drop-off event was convenient
9. What is the most convenient way for you to recycle your electronic devices?
10. Who do you think should typically pay for the safe recycling of electronic devices?
11. If this event had not been available, what would you have done with the electronic devices?
12. Please tell us what brought you to the e-waste event.

Appendix B: Publicity Schedule

2011

E-Waste Days Publicity Schedule

Edited 2/28/2011

February

- 1 Reserve banner ad space in Herald-Times for 5/12-5/14/11. (**Nancy Clensy – done 2/1/11**)
- 15 Possible feature (spotlight) item for IU Bloomington Web site (**Nicole will mention to Thom Atkinson**) (**Twitter and Facebook**) **Would not be spotlighted this early, but request needs to be made to get in to schedule for late April/early May.** (**Nancy Clensy - Done/confirmed 2/11/11**) (See notes on 3/26/11 and 5/9-14/11).

March

- 1 Poster & flyer design work completed and approved. Send to printer. (**Sarah Engel, UITS**)
- 2 Website Launch www.indiana.poweron.com (**Gerrell or Susan?**)
- 2 Meet with Kelly (Bloomington. Chamber) Story line for April or May Business Network Edition (**Clensy/Victoria or Sam**)
- 2 Draft Distribution list for posters/flyers prepared for Committee review (**Nancy Clensy, Victoria or Sam**) (**Done, e-mailed to committee 2/28/11**)
- 5 Develop plan for IU department's advance involvement with getting items to Surplus Stores or making arrangements for items to be picked up and delivered to Surplus Stores (**Susan Coleman Morse**)
- 14 Discuss cross-promoting of MCSWD Bulky Item Drop Days and E-Waste Event with Steve Akers, Scott Morgan, Tim Frazier, etc. Report back to E-Waste Committee. (**Nancy Clensy/Victoria or Sam**)

Contact Jeremy Shere regarding “A Moment in Science” featuring E-Waste Collection Days. Jeremy would then have to pitch the idea to Don Glass. **(Nancy Clensy/Victoria or Sam)**

Contact Chad Carrothers about WFHB Eco Report. **(Nancy Clensy/Victoria or Sam)**

Research “green” student groups at Ivy Tech (Ben Ackerman?), Bloomington High School North (Jean Schick?), Bloomington High School South (Joe Doyle?) According to Emilie Rex there is an Environmental Club at Bloomington High School South. **(Nancy Clensy/Victoria or Sam)**

Plan in place on how we hope to work with Bloomington area local elementary, middle and secondary schools on promotion of E-waste event to parents. Make sure New Tech High School is included. **(Nancy Clensy/Victoria or Sam)**

- 21 IUB/IUPUI/IUSB Departmental E-News Blast regarding early collection opportunities **(Susan Coleman Morse)**
- Email Blast to Educators in K-12 system within 60 mile radius of Bloomington **(Nancy Clensy/Victoria or Sam)**
- Similar email contact with Indianapolis Public Schools or South Bend area K-12 schools? **(Susan Coleman Morse and Mike Keen/Carissa Hipsher?)**
- 21 IUB/IUPUI/IUSB Departmental E-News Blast regarding early collection opportunities **(Susan Coleman Morse)**
- Email Blast to Educators in K-12 system within 60 mile radius of Bloomington **(Nancy Clensy/Victoria or Sam)**
- Similar email contact with Indianapolis Public Schools or South Bend area K-12 schools? **(Susan Coleman Morse and Mike Keen/Carissa Hipsher?)**
- 21 Distribution of posters & flyers completed by student groups coordinated through IT student ambassadors and Office of Sustainability interns, etc. , perhaps even with high school student groups. Distribution to local schools, churches, Ivy Tech, Starbucks, Dunkin Donuts, Square Donuts, Crescent Donuts, Best Buy6, Sam’s Club, Office Depot, Staples, etc. Complete list to be determined and made available. **(Clensy/Victoria or Sam can compile the list.) (Would appreciate coordination of the distribution effort through Gerrell or Susan?)**
- 28 Monitor e-waste registrations via the Web site. Follow-up with School systems and non-profits, other institutions of higher education, etc. to encourage making early arrangements for pick-ups by Apple.
- 28 Finalize PSAs for Bloomington area radio stations and get distributed via pre-recorded audio or text for live read. **(Mike Pipher, PAGR)**

April

- 8 Determine need for Flyer and Earth Day Outreach to K-12 School System (???)
Earth Day Press Release – Story Topic: Preserving the Environment by not dumping
(**Steve H., Univ. Comm**)
- 14 Electronic Home Pages – Story Topic: What can be collected, how much has been
collected in past 1-2 years, etc. (**Steve H. and Jayne Spencer**)
- 17-22 Sustain IU activities. Promote E-Waste Collection Days via involvement of Student
Sustainability Council (SSC) during “Sustain IU”.
- 22 Earth Day Press Release – Story Topic: Preserving the Environment by not dumping
(**Steve H.**)
- 26 Press Release #1 sent to wide spread media (**Steve H.**)
This release will appear on the Newsroom site as soon as it goes out.
- 26 Press Release to Bloomington. Sustainability Committee (**Nancy get e-mail addresses to
Steve by 4/4/11**)
- 26 Press Release to Monroe County Solid Waste Mgt. (**Nancy get e-mail addresses to
Steve by 4/4/11**)
Press Release to City/County Offices of Bloomington (**Nancy get e-mail addresses to
Steve by 4/4/11**)
Press Release to local non-profits via contact through Monroe County United Way
(**Nancy get e-mail addresses to Steve by 4/4/11**)
- IUPUI internal promotion of this event to Tox Away day via JagNews, Inside IUPUI,
JagTV and others (**Schneider**)
Events Calendar and Campus News link on IUPUI’s home page (**Schneider**) (**per level
of cooperation with IUPUI Communications and Marketing??; Susan Coleman
Morse**)
- 26 Begin to mention on IU Twitter and continue up through event dates (**Allison Cooke**)
- 27 E-Waste Event Button on IU Gateway 4/28 – 5/13/11 (**Steve H., Rebecca S.**)

28 WGCL Afternoon Edition Radio Show 4pm-6pm – Apple Interview (**Nancy coordinates; Gerrell Williams or Susan Coleman Morse along with perhaps Bill Brown participates**)

May

- 2 Deadline for Full Story for Perspective on Policy (**Steve H.**)
- 2-6 Promote E-Waste Collection Days at Hoosier to Hoosier collection site, IU Fieldhouse. (**Emilie Rex**)
- 5 Live at IU (Event Box & Calendar) – (**Nicole Roales, Univ. Comm.**)
- 6 Feature story in IU Home Pages (**Steve H./Jayne Spencer**)
- 8 Chamber Email Blast to members Bloomington (**Nancy**)
BEDC/IED Email Blast to members (**Nancy**)
- 9-14 Graphic button on Campus home page, story on Facebook, Twitter reminders (**Allison Cooke and Thom Atkinson**)
- 10 HT story (**Steve Hinnefeld**)
- 10 News release and Full Story – Perspective on Policy (**Steve Hinnefeld, Univ. Comm.**)
- 11 WGCL Afternoon Edition Radio Show 4pm-6pm (**Nancy coordinates; Gerrell Williams or Susan Coleman Morse along with perhaps Bill Brown participates**)
- 12 Active for Life Calendar (**Nicole Roales**)
- 12-14 H-T Paid banner Advertisements – bottom front page strip (**PAGR/Nancy**)
Press Release on Collection from first day – artwork with weight (**Chris Meyer or another UC photographer** to capture photos (photo gallery) on first day of collection)
- 12, 13 or 14 Coordinate with local (Bloomington) radio station for a remote/live-feed during one day of the event, ideally Friday or Saturday. (**Nancy coordinates with radio station.**)
- 13 Press Release on Collection from first day (artwork)

23 Press Release on Total Collection to All local media outlets (artwork)

Appendix C: Distribution List

2011 Poster/Flyer Distribution List

Area Churches - www.earthcareindiana.org

Area Schools – refer Corinne’s spreadsheet; note science teachers apparently get excited about this event according to Apple folks.

Area Businesses:

Secure Humane Society bulletin board posting list from Valerie (requested via Corinne 2/9/10)

Monroe County Solid Waste District – for drop locations (Bethel Lane, etc.)

Bloomington Chamber of Commerce

United Way of Monroe County – for distribution to Social Service Agencies network

Ivy Tech – Ben Ackerman in IT area

YMCA

Best Buy

Sam’s Club

Office Depot

Staples

Apple Store in IMU

PC Max on 3rd Street

Starbucks

Dunkin Donuts

Square Donuts

Pita Pit

Qdoba

Buffalouie's

Dagwood's

Finches

Kilroy's

Nicks

Pizzeria

Village Deli

Noodles

Subway (near Optometry)

Mother Bears

Eating places in IMU, other spaces inside of IMU – Cheryl Crouch or Damen Morris

IU Residence Halls