RECYCLING TECHNICAL ASSISTANCE
Project #531

FINAL REPORT

CUMBERLAND COUNTY, PENNSYLVANIA

ELECTRONICS RECOVERY EVALUATION

GANNETT FLEMING, INC.

HARRISBURG, PENNSYLVANIA

MAY 2013

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1.0   STATEMENT OF PROBLEM

According to the Environmental Protection Agency (EPA), consumer electronic devices contain hazardous materials such as lead, mercury, and hexavalent chromium.   Mercury from electronics is a leading source of mercury in municipal waste. Toxins from disposed electronics can be released into the environment through landfill leachate.   Effective January 2013, Pennsylvania began implementing the Covered Device Recycling Act, Act 108 of 2010 (CDRA). The CDRA prohibits the acceptance at disposal facilities of consumer "covered devices" including televisions, desktop and laptop computers, computer monitors and computer peripherals, and prohibits consumers and businesses from disposing their covered devices with municipal waste.   The law further stipulates that facilities that process or recycle covered devices that are collected from consumers must have achieved and maintained one of three specified certifications.

This study was conducted for Cumberland County under the Recycling Technical Assistance program.   The program is sponsored by the Pennsylvania Department of Environmental Protection (PADEP) through the Pennsylvania State Association of Township Supervisors (PSATS).   Gannett Fleming, Inc. (Gannett Fleming) provided technical assistance to determine a preferred electronics recovery program and plan that identifies logistics, projected material volumes, and estimated costs and revenue.

2.0   SUMMARY OF WORK

The following subsections summarize the work conducted by Gannett Fleming under the approved project tasks.

2.1   Background Information and eWaste Options Screening

Cumberland County held eleven (11) drop-off recycling events between 2001 and 2009, collecting an average of 126,000 pounds of material per event.   County-sponsored electronics recovery events have been discontinued because of insufficient funding.   The County no longer generates revenues through administrative fees tied to County waste disposal.   Gannett Fleming met with County Staff at project start up to screen a wide variety of options for electronics or "eWaste" management (See **Appendix A - eWaste Options**).   Some eWaste options were quickly eliminated due to the capital cost investment that would be required or for other reasons.

2.1.1   Impact of CDRA Legislation

The enactment of the CDRA in Pennsylvania has had a substantial impact on Cumberland County and other counties that is apparent in the first quarter of 2013:

- Waste haulers notified residential customers they will not collect the electronics covered by CDRA. Haulers leave consumer electronics at the curbside for residents to manage, and residents are searching for outlets for this material.
- There has been a dramatic increase (30%-75%) in the recovery of electronics at public, private, non-profit and municipal electronics drop-off sites and processors.
- There is a marked increase in the proportion of TVs/CRTs present in the total amount

of recovered electronics. Data and anecdotal evidence from York, Dauphin and Cumberland Counties suggest that TVs/CRTs have increased from representing 30%-35% of recovered electronics to 50%-75% of recovered electronics by weight.

- Private recyclers (e.g. Zero Export and Computer Barn) are financially burdened by the rapid increase in TV/CRT recycling because TVs/CRTs do not generate revenue and there is a net cost for processing and disposal.
- Manufacturers are required to establish recycling opportunities for consumers.
- There is anecdotal evidence (statewide) that there are increasing numbers of televisions and electronics being deposited along roadways, in illegal dump sites, and in commercial dumpsters.

2.1.2   Electronics Generation and Recovery Potential in Cumberland County

According to the EPA, residential households store five (5) times more computer products (weight) than commercial establishments. EPA information regarding national electronics recovery statistics shows that 25% of electronics are recovered for recycling (**Appendix B**, **Executive Summary Fact Sheet - Electronics Waste Management in the United States Through 2009)**. Gannett Fleming used weight data from Cumberland County electronics recycling events to determine the average weight collected per vehicle over eight years (excluding year 2007 when there was no collection event). The average weight per vehicle is **130 lbs.,** which is assumed to represent the average potential generation (pounds) <u>per household</u>, per year (see chart below).   In neighboring York County, the York County Solid Waste Authority (YCSWA) collects an average of 100 lbs. per vehicle (per HH) at electronics collection events.
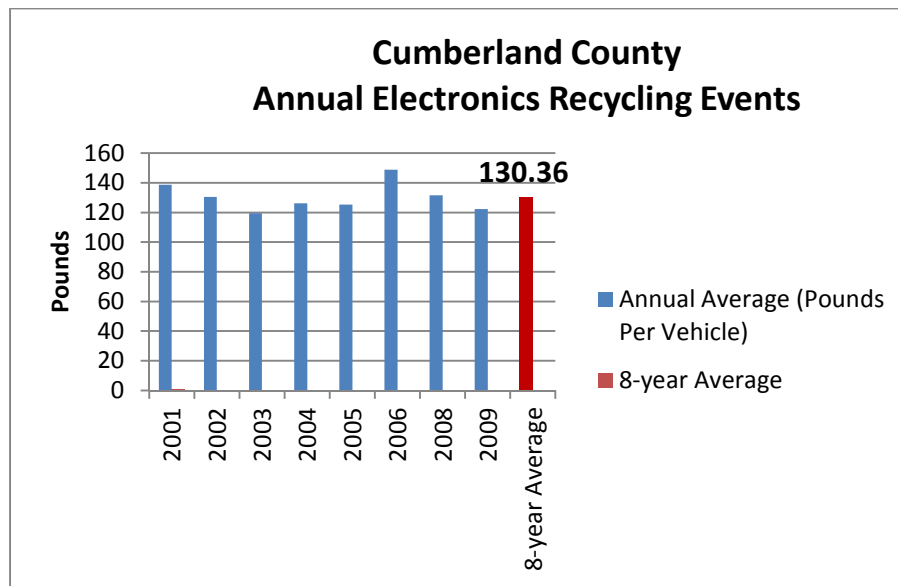
The average of the electronics recovery of 130 lbs. per HH from Cumberland County and 100 lbs. per HH from York County is **115 lbs. per HH**. Assuming all households participate once per year in electronics recycling, the <u>potential</u> annual County electronics generation is calculated as:

93,943 HH (2010 Census, PA State Data Center) X 115 lbs. per HH = **10,803,445 lbs**.

The <u>actual</u> recovery potential for a County-administered program like the one proposed in Section 3.2, is much lower than 10 million lbs. per year. Gannett Fleming projects that a realistic recovery target for a network of public electronics recovery programs would be 5% of the 10,000,000 potential, or **500,000 lbs. annually**. This estimate considers many factors, and should be refined by the County. Some factors influencing this estimate include:

- Electronics generated by County consumers are being recovered in a variety of ways and locations and recycling capacity will continually change.
- Berks County and York County publicly operate public electronics programs including municipal satellite sites and permanent facilities. Each County projects that they will recover about 1,000,000 lbs. of electronics in 2013. Each County has nearly twice the population of Cumberland County.
- A targeted diversion of 500,000 lbs. annually would likely be reached in phases, for example, year 1 (100,000 lbs.), year 2 (250,000lbs.), years 3 and 4 (400,000 lbs.), year 5 (500,000 lbs.).

2.1.3   Known In-County Electronics Acceptance and Processing Capacity

Gannett Fleming reviewed information on existing electronics outlets to assess whether adequate processing capacity exists in the County to meet material generation rates. Electronics "**processing**" or "**recovery**" refers to legal methods of collecting, receiving, consolidating and handling electronics for the end purpose of reuse and recycling. Destroying hard drives and refurbishing electronics for direct re-use does not require a permit issued by PADEP. In-County electronics acceptance facilities and processors are shown below. Refer to **Appendix C -Memos** for additional details regarding operations, accepted materials and processing capacity.

- **Computer Barn** - a computer repair, sales, service and recycling facility located near Carlisle that takes all covered devices. The operation was audited by PADEP in 2013 and is approved to accept covered devices. www.thecomputerbarn.com Consolidated electronics are shipped to eForce Compliance www.eforcecompliance.com, a Philadelphia area electronics recycling company meeting R2, e-Stewards and ISO 14001 standards.
- **Zero Export, LLC.** – a PADEP Permitted Recycler (WMGR081D026) located in Mount Holly Springs. The facility is seeking R2 Certification to become an approved processor. www.zeroexport.net
- **Computer Ministry** – located at 5 Pleasant View Drive in Mechanicsburg; collects, refurbishes, and donates computers to non-profit ministries and organizations that need computers. www.compministry.org. As of the writing of this report, the organization intended to contact PADEP to see if it could reject televisions.
- **Goodwill Store & Donation Center** – located in Mechanicsburg and Lemoyne.
- **Retailers -** Best Buy in Mechanicsburg is registered under CDRA. Staples in Mechanicsburg, Camp Hill, and Carlisle is not registered under CDRA, but accepts covered devices. H.H. Gregg in Mechanicsburg accepts electronics for recycling.
- **Municipally Operated Electronics Programs –** Newville Borough. The Borough completed Municipal Electronics Collection registration as required in order to conduct collections. Southampton Township is approved by PADEP to conduct bi-annual collection events.

It is Gannett Fleming's conclusion that there is insufficient capacity in Cumberland County to effectively manage the estimated 10,000,000 pounds of electronics generated annually. This conclusion is based on generation projections, existing capacity, and interviews with public, private and non-profit electronics recovery entities struggling in different ways to meet the increased volume due to CDRA legislation. An effective electronics recovery program will include the geographic distribution of recovery facilities across the County to offer convenient disposal to all residents.

2.2 Minimum Siting and Operations Criteria for Public Electronics Drop-off Sites

Minimum siting and operation criteria are important to the safe and efficient handling of electronics at municipally operations programs open to the public on an ongoing basis (e.g. Monday through Friday, 8:00 a.m. – 3:30 p.m.). The following criteria are a guideline to help the County and/or municipalities make decisions regarding the implementation of suitable receiving or "satellite" locations for electronics. Satellite locations receive, consolidate, and transfer electronics to a permitted electronics recycling facility. Some of these criteria may not be applicable to a facility involved in demanufacturing or processing of electronics in a manner that requires PADEP permitting and/or electronics certifications. These criteria should be considered when selecting and implementing a satellite recovery site for consumer electronics:

- Electronics recovery sites must be registered with PADEP.
- Safe ingress/egress to the drop-off site with adequate vehicle cueing distances and adequate line of sight is crucial for safety. Signage should be located at the entrance and at the electronics drop-off areas.
- A covered building is necessary for electronics storage to keep materials out of the elements. The covered storage area should be large enough to store up to 40 skids, which is equivalent to a 53' trailer load of electronics.
- The drop-off site should be equipped with a forklift or similar equipment with forks for safe loading, stacking and unloading of skidded electronics. Although this work can be done manually with a pallet jack, it is not recommended that electronics be handled without forked powered equipment to improve safety and efficiency.
- At least one staff person is needed to be work within proximity of the electronics drop-off and receiving area to assist customers as they arrive. This employee should spend the majority of his/her time completing normal work tasks. The time spent on electronics will vary based on the number of drop offs.
- Skids, gaylords and plastic film/shrink wrap should be on site and may be supplied by the contracted vendor.

The following features can benefit the efficiency of electronics receiving and processing, but are not minimum criteria:

- One or more freight loading docks (standard height is 48") for direct loading skids of electronics minimizes double handling of material and also eliminates the need for storing most electronics.
- A looped traffic flow pattern allows vehicles to enter, unload electronics, and exit the area travelling the same direction.
- Covered storage areas with adequate ceiling height to allow double or triple stacking of skidded electronics saves valuable floor space.

2.3 Potential Electronics Recovery Facility Site Visits

Gannett Fleming visited a proposed permanent electronics recovery site located in Carlisle, Pennsylvania on February 15, 2013. County staff suggested this site might serve as a permanent location managed by the County, with the possibility of using the labor of prison workers at little to no cost. This site had two potential collection areas or buildings. The Site Visit Summary is contained in **Appendix D, Site Visit Summaries**. The key findings include:

- The vehicle maintenance garage meets the basic criteria for a suitable permanent electronics recovery facility (Refer to **Section 2.2**).
- The forklift at this location could be used as backup if it can be repaired, but is not suitable to serve as the primary forklift for an electronics program.
- A loading dock is not available, which would save a substantial amount of time when loading electronics into trailers.
- The barn to the east of the vehicle maintenance garage is not suitable and potentially unsafe for handling electronics.

3.0 SOLUTIONS

It is Gannett Fleming's conclusion that the existing generation rate of electronics (requiring recycling) exceeds in-county electronics recovery and processing capacity. Consequently, electronics disposal remains inconvenient for a portion of County residents (and businesses) and contributes to improper handling, mismanagement and illegal dumping of electronics. The County, private recyclers, non-profit organizations, and the municipalities all have a role in a comprehensive solution to these problems.

In the following subsections, Gannett Fleming has provided a recommended plan that describes the County's role in promoting the effective recovery of covered electronics. Due to the limited access to funding for electronics recovery, Gannett Fleming has recommended solutions that require little or no capital investment by the County. The preferred solutions recognize that, for now, electronics are a valuable commodity. Separated electronics components may yield over fifty cents per pound. However, the combined value of all types of electronics currently yields one to four cents per pound. Because of this value, many electronics vendors provide trailers, skids, shrink wrap, transportation, and driver services at no cost for scheduled pickup of one or more truckloads of palletized electronics. It must be noted that the electronics market value is decreasing because of increased material (supply and demand), increased portion of low value materials like televisions, and decreases in the consumer price index for certain precious metals along with other factors like transportation costs.

Based on interviews with several municipalities, it is clear they are willing to participate in electronics recycling, but the desired level of involvement varies. Three (3) municipalities interviewed during this study are receptive to working with the County to further evaluate electronics recycling. Municipal or publicly-administered electronics recycling appears to be aligned to serve residential, not commercial, electronics recovery. It is expected that enhanced local municipal electronics sites would recover a large portion of TVs/CRTs, which currently have limited outlets in the County.

The in-County private sector retailers and recyclers have capacity to accept additional electronics. However, retailers such as Best Buy and Staples limit TV/CRT recycling options and these materials represent over half of the total electronics currently generated by the residential sector. Staples in Mechanicsburg recycles 2-4 skids of electronics every two weeks, while Best Buy in Mechanicsburg recovers 3 truckloads per week. Zero Export and the Computer Barn both have capacity to accept additional electronics, but report that the substantial increases in the number of TVs/CRTs received is having a negative financial impact on their business. Zero Export and Computer Barn would like to increase the portion of electronics received from County businesses because this material has higher value.

3.1   Permanent Electronics Recovery Program

Gannett Fleming reviewed a potential permanent electronics site in Carlisle that could be managed by the County, or possibly by a contracted entity (**Appendix D, Site Visit Summaries**). Gannett Fleming does not recommend the County operate a permanent electronics program at this time for the following reasons:

- **Cost:** A permanent facility requires a covered building, equipment, fuel, labor, administration, permitting, utilities, and ongoing maintenance and management that will require revenue to sustain. Electronics commodity market value is unpredictable, and as of April 2013, electronics values are dropping.
- **Potential Capacity:** Additional electronics recycling capacity/programs can be identified and developed within the County. A resource-demanding permanent County-operated electronics facility is not a required solution at this time.

Notably, the maintenance garage is nearly ideal for periodic electronics collection events. If determined to be economically feasible (e.g. vendor provides services at no cost), collection events could be held once per month to serve Carlisle and perhaps surrounding municipalities.

3.2   Recommended Electronics Recovery Program Plan/Approach

Gannett Fleming recommends Cumberland County increase its involvement in recovery of County-generated electronics as follows:

- Serve in an administrative capacity to assure the County-wide availability of sustainable, safe, convenient and cost-effective electronics recovery. By limiting its role to an administrative one, the County will reduce financial and liability risks when compared to permitting, owning, and operating one or more permanent electronics facilities. It is assumed there are no new capital expenses. County staff would support electronics recycling as part of routine business, and thus incur no additional labor or related expenses.
- Develop cooperative relationships with public, private, non-profit, and municipal entities providing, or interested in providing, electronics recovery, recycling or related used electronics services.
- Work transparently and cooperatively with public, private and non-profit entities to expand collection capacity for residential and commercial electronics to meet demand:
  - Develop additional collection capacity for residentially-generated electronics by expanding the number of "satellite" electronics sites and collection events

provided by local municipalities. Initially, it is recommended three (3) new sites be targeted for implementation by 2014, and that the sites be located in areas within the County where public electronics recovery points (of any type) are not currently available in a convenient location (e.g. over 10 minute one way travel).

- o Support in-county private and non-profit recyclers to improve their ability to sustain electronics recovery. Two initiatives that would benefit the Computer Barn and Zero Export include:
    - ▪ In a manner confirmed with each recycler, identify/implement electronics capacity within reasonable proximity to these facilities to divert a portion of TVs/CRTs that are negatively impacting business.
    - ▪ Increase recovery of electronics from area businesses. Business electronics are critical to the financial sustainability of these private operations and help them remain an outlet for residential and commercial electronics for years to come.

- • Develop and issue Requests for Proposals (RFPs) that may be utilized to secure qualified electronics vendors to support implementation of municipal electronics programs. Assuming multiple municipalities or entities participate, and electronics sales continue to generate revenue, issue prorated rebates back to the hosting municipalities/organizations to compensate for some of their expenses. An electronics RFP could include the following program types:

    - o **Ongoing Electronics Programs or "Satellite" Sites** offered by municipalities (and/or by other identified non-municipal entities, if feasible). These programs would be open to accept electronics year-round according to a defined schedule (e.g. Monday through Friday). A qualified vendor selected through the RFP process would support this type of program by providing skids, gaylords, and shrink wrap. The vendor may either stage a trailer for electronics or provide on-call service when a truckload of skidded electronics has accumulated at the drop-off location. These programs are best suited for municipalities (or other entities) that meet the minimum criteria presented in **Section 2.2.** Satellite sites must register with the PADEP (**Appendix E, Municipal Electronics Collection Registration Form, Rev. 10/2012**). Based on year 2012 data from existing municipal satellite sites, electronics recovery is highly variable and may range from 3,000 to 30,000 lbs. recovered annually (See **Appendix F**, **YCSWA 2012 Electronics Recovery**). In 2012, Warrington Township (shown as Wellsville) recovered 20,494 lbs. of electronics and received a $2,200 rebate from YCSWA.

    - o **Electronics recycling events**. A qualified vendor would provide a trailer along with a driver for a daylong electronics event. The driver would participate in quality assurance and operate the pallet jack in the trailer to position skids in the trailer. A forklift or similar forked equipment would not be included and additional personnel would be needed to manage traffic flow and generally assure safe, effective electronics recovery on the day of the event.

It is recommended the County evaluate the feasibility of joint-county participation in the electronics RFP that will be issued by the York County Solid Waste Authority in May, 2013.

4.0   CONCLUSION

The Covered Device Recycling Act (CDRA) and disposal ban has increased the diversion of electronics from Pennsylvania landfills.   Current data from York and Dauphin Counties suggests a 40%-75% increase in electronics recovery at advertised private and public electronics recycling programs in Cumberland and surrounding counties.   As of April 2013, Gannett Fleming estimates that CRTs represent 50% - 70% (by weight) of the total electronics received at electronics programs in southcentral Pennsylvania that accept TVs/CRTs.   Many of the private (e.g. Best Buy) and non-profit electronics programs (e.g. Computer Ministry) in Cumberland County have restrictions that limit or prevent TV or CRT recycling.   Additionally, in-County operations like the Computer Ministry report being overwhelmed by incoming electronics. It is Gannett Fleming's opinion that Cumberland County, its local municipalities, private recyclers, and non-profits must share the responsibility of recovering electronics in order to meet current disposal/recycling capacity for these materials. Mismanaging electronics can negatively impact health, safety and welfare.   The question facing the County is not *if* the County should be involved in electronics recovery, but *how*? Gannett Fleming recommends the County assume an administrative role to facilitate the safe, efficient and comprehensive recovery of electronics as implemented through cooperative efforts among private recyclers, electronics retailers and manufacturers, non-profit organizations, and municipalities.

APPENDICES

Gannett Fleming, Inc.
Provided by: Steven Deasy
Date created: 2/14/2013

Overview of consumer electronics or "eWaste" Recovery Options
Cumberland County

As Pennsylvania responds to the ban of electronics disposal in its landfills, County Governments have a role to play in eWaste Recovery. There are a variety of eWaste Recovery options available to Cumberland County.   Factors supporting that the County should be involved in eWaste recovery include:

- January 1, 2012 Covered Device Recycling (Act 108) of 2010 (CDRA) requirements for covered device manufacturers, retailers, electronics recycling facilities became effective. On January 24, 2013, a disposal ban on covered devices became effective, prohibited the disposal of covered devices or its components with municipal waste.

- Evidence shows a substantial increase in electronics recovery in public and private electronics recyclers since Jan 2013. Similar to many Pennsylvania counties, Cumberland County currently lacks sufficient drop-off locations to offer convenient and effective electronics recovery County-wide.

- Due to a variety of toxins in covered device components that are potentially hazardous, the collection, processing and disposal of covered devices can negatively impact human and environmental health, safety and welfare locally, regionally and globally.

eWaste Recovery Options

Gannett Fleming reviewed a variety of eWaste options available to manage consumer electronics in the County. Some options require direct involvement by the County, while other eWaste options require indirect involvement where there is little to no involvement by the County. The options were reviewed with County staff to screen the options and develop a recommended strategy for the County.   Some Key factors influencing the selection and justification of an eWaste management option include:

- Costs/funding
- Permitting requirements
- Market location and Commodity Pricing
- Siting criteria
- Equipment/logistics
- Willingness by entities to participate

TABLE 1
County Indirect Involvement in eWaste Management

Option A	Consolidation Point (in-County)	Collection Point Handling	eWaste Transportation	Electronics Recycling Facility (includes covered device disassembly)	Requirements
1	**Low-tec Municipal Satellite Site (s)**	Consolidate/sort/load (no-disassembly)	Contract directly with recycler or hauler or cooperate with County to secure qualified hauler/recycler via competitive solicitation	Any PADEP-approved/certified electronics recycler	Registered Consolidation Point Certified Hauler Permitted Processor
2	**Low-tec Non-profit Satellite Site (s)**	Consolidate/sort/load (no-disassembly)	Non-profit continue to secure required transportation arrangements	Any PADEP-approved/certified electronics recycler	Registered collection Point Certified Hauler Permitted Processor
3	**Approved In-County Electronics Processors/Recyclers**	Consolidate/sort/load/reuse/refurbish/resale	Primary transport by consumers directly to approved processors	Zero Export Computer Barn *Dauphin County Recycling Center	PADEP-approved, Permitted and Certified Processor *A formal agreement between County and Dauphin County Recycling Center needed to confirm Cumberland County residents can participate
4	**No County administered Sites or Facility**	System Remains Private/Public - Two (2) permitted in-County Facilities - Retailers (e.g. Best Buy) - Municipal events/recovery sites	Remains Private or by another entity (e.g. municipal)	Any permitted & Certified Electronics Recyclers	Assumes requirements will be met by private sector or other recovery programs (e.g. municipal sites/ collection events)

Note: eWaste Recovery options include the County's "indirect" involvement with electronics management. Indirect involvement means the county would not own or leasing facilities, use County staff and/or other labor resources, procure and use supplies and equipment, etc. for eWaste management.

TABLE 2
County Direct Involvement in eWaste Management

Option B	Electronics Recycling Facility (ERF) (includes covered device disassembly)	Collection Point(s)	eWaste Transportation	Electronics Recycling Facility	Requirements
1	**County Owns/ operates Existing Building for ongoing collection**	ERF is primary ERF may serve satellite sites	Contract w/ County & certified hauler Satellite sites handle transport to ERF	Example: Maintenance Garage off Army Heritage Drive in Carlisle. Contracted Operator	General Permit WMGR081 & R2, or e-Stewards Certification. All state, local, federal site specific permitting. CDRA Requirements.
2	**County Leases Existing Building**	ERF is primary ERF plus satellite(s)	Contract w/ County & certified hauler	None identified	General Permit WMGR081 & R2, or e-Stewards Certification. All state, local, federal site specific permitting. CDRA Requirements. County must request written consent from building owner regarding proposed operation for submittal to PADEP.
3	**County owned or leased building with operation outsourced via solicitation**	ERF is primary (operations outsourced) Satellite Sites (operated by County and/or Contracted)	Contract w/ County & certified hauler or contractor handles transportation, possibly via subcontract	Example: Maintenance Garage off Army Heritage Drive in Carlisle. Contracted Operator	PADEP-approved/Registered Site County Issued Solicitation for Electronic Recycling Facility Operation. Contracted entity meets all applicable requirements
4	**eWaste Events**	Identified collection event sites registered with PADEP	Contract w/ County and certified hauler/recycler for events	Any PADEP-approved recycler secured for event recycling (e.g. via competitive bid to provide eWaste event services)	All eWaste sites, including those used to host periodic collection events must be registered with the PADEP.
5	**County-Wide Curbside electronics Collection**	Curbside at consumer location (e.g. household)	County secure eWaste hauling and disposal service	Any PADEP-approved recycler identified by the contracted hauler	All applicable eWaste collection, transportation and processing requirements.

Note: eWaste Recovery options include "direct" County involvement with an Electronics Recycling Facility. "Direct" involvement may include County outsourcing of some or most components of eWaste collection, transportation and processing.

Table 3
eWaste Management by County Municipalities

Option C	Curbside Collection of eWaste	Collection Point(s)	eWaste Transportation/ Hauling	Electronics Recycling Facility	Requirements
1	**Curbside eWaste Collection as incorporated by the municipality within its residential curbside waste collection contract.**	Residential curbside on days scheduled, typically via call in, by homeowners	Executed by the qualified contracted hauler for residential waste collection & eWaste collection	Determined by the contracted hauler or specified in contract by municipality	Municipal Bid Specification. Spec & Hauler meets requirements. Hauler may not bill Individual households for separate eWaste service.
2	**Operate Satellite Site Independently** (without coordination with County)	Registered Municipal Location serving one or more Municipalities	Transport by the Municipality to recycler or via vendor	Could be local recycler like Zero Export or a distant vendor like eForce Compliance in Philadelphia	PADEP - Registered Site
3	**Operate Satellite Site w/County Coordination**	Registered Municipal Location serving one or more Municipalities.	Transportation by the Municipality to recycler or via vendor (vendor may be secured via county issued RFP)	Could be local recycler like Zero Export or a distant vendor like eForce Compliance in Philadelphia	Municipality Must Register Site with PADEP. County should submit letter to PADEP regarding County involvement
4	**eWaste Events**	Registered Municipal Location serving one or more Municipalities.	Transportation by the Municipality to recycler or via vendor	Any PADEP-approved eWaste recycler	PADEP - Registered location

Electronics **Waste Management**
In the United States **Through 2009**

Executive Summary

Executive Summary

Consumer electronics have become increasingly popular and culturally important over the past several decades, changing how we communicate, get information, and entertain ourselves—and the speed with which we do so.
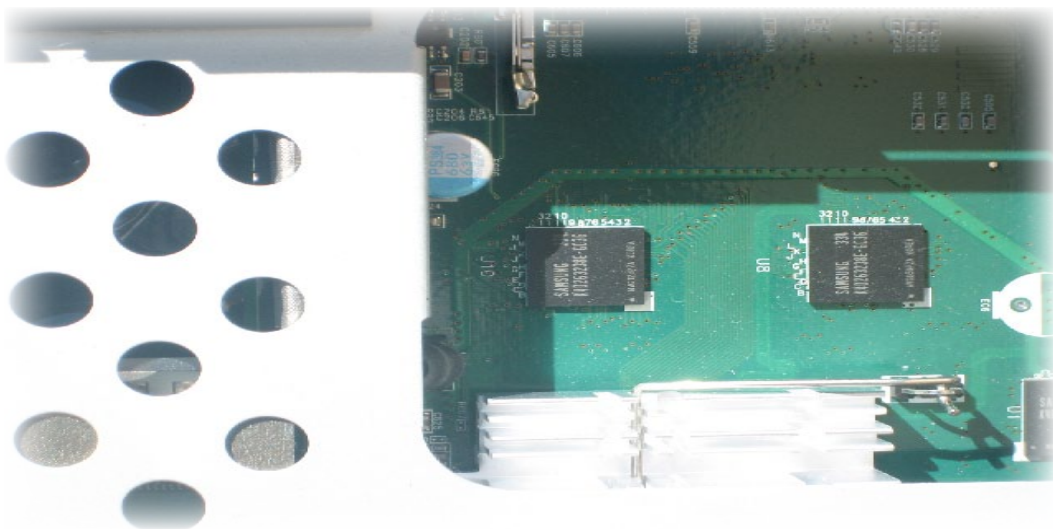
As the nature, use, and number of electronic products change over time, patterns of sales, storage, and end-of-life management (disposal and collection for recycling) also change. Waste managers, manufacturers, and policymakers need reliable and current information to inform and improve the management of used electronics. This Executive Summary provides an overview of the report, *Electronic Waste Management in the United States Through 2009*.

We estimate that in 2009:

- 438 million new electronic products were sold;

- 5 million short tons of electronic products were in storage;

- 2.37 million short tons of electronic products were ready for end-of-life management; and

- 25 percent of these tons were collected for recycling.

Used electronics comprise approximately one to two percent of the municipal solid waste stream, but they garner a great deal of interest for several reasons:

- ☐ rapid sales growth and change in the sector are generating a growing stream of used electronics needing appropriate management;

- ☐ electronic products contain diverse material inputs and scarce resources, many of which can be recovered;

- ☐ the presence of substances of concern in some electronics, particularly older products, merits greater consideration for safe end-of-life management; and

- ☐ opportunities for resource conservation and materials recovery through increased reuse and recycling of electronics.

To better understand and quantify the movement of used electronics, we analyzed select electronic products from residential and commercial/institutional users that were sold in the United States from 1980 through 2010. We looked at the electronic product categories listed below. We chose these categories because they cover a broad range of electronic products commonly targeted by stewardship and recycling initiatives at the federal, state, and local levels.

- Computers: desktop central processing units (CPUs) and portables

- Computer displays: cathode ray tube (CRT) monitors and flat-panel monitors

- Keyboards and mice

- Hard-copy devices: printers, fax machines, scanners, digital copiers, and multi-function devices

- Televisions (TVs): monochrome, cathode ray tube (CRT), flat-panel, and projection

- Mobile devices: cell phones, personal digital assistants (PDAs), smartphones, and pagers

The full lifecycle of electronic products includes the acquisition of raw materials, manufacturing, purchase and use, storage, and end-of-life management (recycling or disposal). This report models the number and weight of electronic products that are in use, storage, and end-of-life management in a given year; extending from purchase to the point when the product is either disposed or collected for recycling. The subsequent management and processing of electronic products that were collected for recycling involves a different methodology which EPA has not yet developed. Consequently, this report does not attempt to quantify the portion of electronic products collected for recycling that are subsequently exported.

The data elements in the model include sales, product weights, lifespan and storage estimates, and the quantity of used electronic products collected for recycling. We used sales data to determine the number of electronic products entering use in a given year and weight data to estimate the total tonnage of these products. We used shipment data from International Data Corporation, Consumer Electronics Association, and an INFORM report to estimate sales. We projected sales for 2008-2010 based on trends in the shipping data, literature, and communications with industry experts. Using data from an electronic product brand distribution project conducted in Florida from 2004 to 2006, we estimated the lifespans of each electronic product category. From literature and communication with industry experts, we developed assumptions of how long products are in use versus storage, and modeled the total number and weight of electronic products in use, storage, or end-of-life management for each calendar year.

To determine the quantity of used electronics collected for recycling, we estimated the amounts of used electronics collected from residential and commercial sources. For used electronics collected from residential sources, we took data from eight state-mandated electronics recycling programs, covering 29 percent of the U.S. population and combined it with an assumption that one pound of electronics per capita is collected for recycling from the remaining 71 percent of the population. This assumption is consistent with states reporting low levels of collection and reflects our understanding that electronic products are collected through various municipality or manufacturer sponsored programs in varying amounts but reporting is not in place. From the quantity of used electronics collected from residential sources, we then back-calculated the total amount of used electronics collected for recycling, assuming that used electronics collected from commercial/institutional sources accounted for 67 percent of the total, based on survey information from recyclers. To estimate the rates at which mobile devices are collected for recycling we used the results of a small survey of recyclers.

Table ES-1: Total products at end-of-life, in storage, and in use in 2009

	Computers		Computer displays		Hard-copy devices	
	units ('000s)	short tons	units ('000s)	short tons	units ('000s)	short tons
Total sold (1980–2009)	857,000	7,570,000	653,000	11,000,000	471,000	4,050,000
In use	325,000	2,430,000	191,000	2,590,000	167,000	1,450,000
Total in storage	70,500	742,000	40,200	862,000	41,400	352,000
At end-of-life	462,000	4,400,000	422,000	7,560,000	262,000	2,250,000
	Keyboards and mice*		TVs		Mobile devices	
	units ('000s)	short tons	units ('000s)	short tons	units ('000s)	short tons
Total sold (1980–2009)	1,670,000	1,460,000	772,000	25,400,000	1,660,000	257,000
In use	368,000	311,000	312,000	11,200,000	812,000	94,100
Total in storage	Not Estimated	Not Estimated	104,000	2,930,000	57,800	9,270
At end-of-life	1,310,000	1,150,000	356,000	11,300,000	789,000	154,000

*Keyboards and mice are each counted individually and the model did not include any storage estimates.

Table ES-2: Rate at which used electronics are collected for recycling relative to the total weight of each product ready for end-of-life management, 2006 to 2010
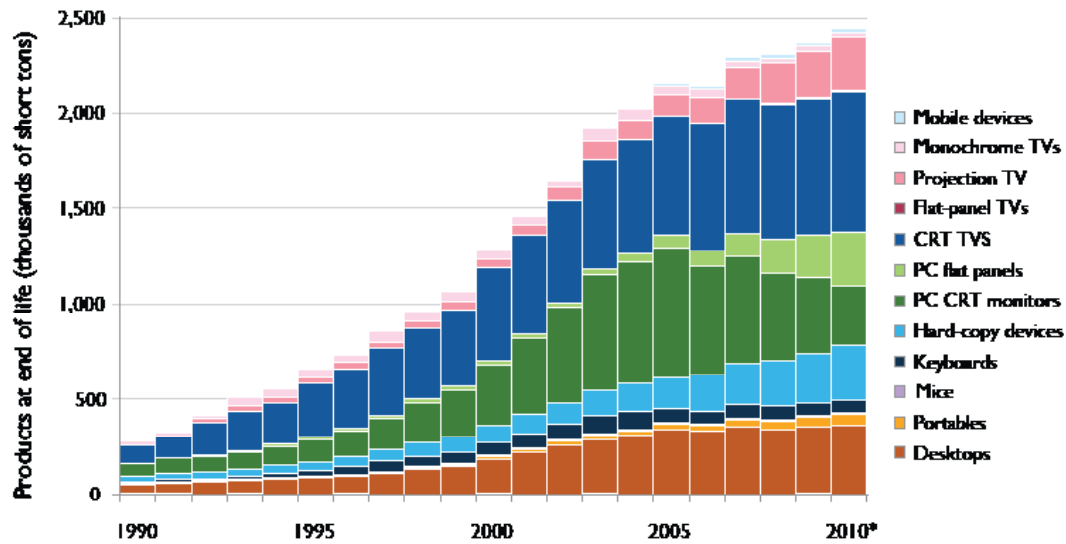*Results are projected for 2010 based on estimates from previous years.*

Calendar year	Computers	Computer displays	Hard-copy devices	Keyboards and mice	TVs	Mobile devices	Total
2006	33%	21%	37%	7%	16%	6%	**22%**
2007	36%	24%	38%	7%	17%	7%	**24%**
2008	38%	26%	35%	7%	16%	11%	**24%**
2009	38%	29%	34%	8%	17%	8%	**25%**
2010*	40%	33%	33%	10%	17%	11%	**27%**

Note: The rate at which mobile devices are collected for recycling each year varies more significantly from year to year, compared to other product types, because of variation in actual collection of mobile devices and the quality of collection reporting.

According to our analysis and projections:

- Sales of new electronics are driving increases in the use, storage, and end-of-life management of electronics. An estimated 438 million electronic products were sold in 2009, which represents a doubling of product sales from 1997 - driven by a nine-fold increase in mobile device sales.

- 2.37 million short tons of used electronics entered end-of-life management in 2009, which represents an increase of more than 120 percent of the quantity of electronics discarded from 1999. Table ES-1 details the number of electronic products by category that entered end-of-life management in 2009.

- CRT TVs and CRT monitors comprised nearly half, by weight, of the electronics that entered the waste stream in 2009.

- 141 million mobile devices entered end-of-life management in 2009, more than any other type of product included in the analysis, yet they comprise less than one percent of end-of-life electronics by weight.

- 25 percent of electronic products were collected for recycling in 2009. Table ES-2 provides information on the rates at which individual electronic product categories were collected for recycling. If recent trends in the growth of electronics collected for recycling continue, this will likely reach 27 percent in 2010—an increase of 179,000 short tons relative to 2006. This quantity could increase further as new state programs are implemented.

- Five million short tons of electronic products were in storage in 2009. Residential households currently store five times more computer products than commercial establishments.

Figure ES-1: Quantity of electronic products ready for end-of-life management in the United States. *Results for 2010 are projected based on estimates from previous years.*

Figure ES-2: Quantity of electronic products collected for recycling or disposed of, by year. *Results for 2010 are projected based on estimates from previous years.*
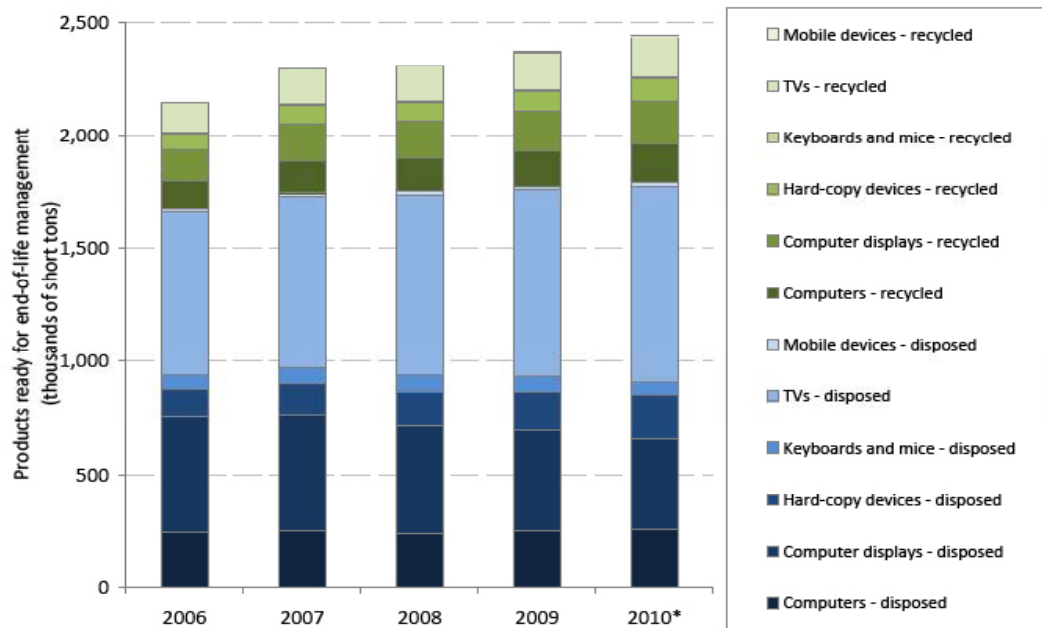
Our new estimate for the tonnage of electronic products collected for recycling in 2007 is 30 percent higher than our earlier estimate in our 2008 report. We believe this change results primarily from improvements to the methodology in estimating the amount of used electronics sent for recycling, rather than real changes reflected in the data. Due to the lack of robust data, there is still a high level of uncertainty in the actual quantity of used electronics collected for recycling.

Our estimate of the quantity of used electronics collected for recycling is highly sensitive to three assumptions: first, that one pound per capita of electronics is collected for recycling from states that do not report collection amounts; second, that there is a relationship between the amount of electronics collected from residential and commercial sources; and third, that 67 percent of used electronics collected for recycling come from commercial sources. Other important sources of uncertainty in the data on electronic products include their: average weights, lifespans, the period of time they spend in storage, and the rate at which they are collected for recycling.

Although this analysis provides an overview of the current management of electronics in the United States using the best data available, its broad scope does not account for variations at the regional, state, and local levels that are likely to influence the larger picture. Further research, data collection, and collaboration among all stakeholders, will be essential in developing a clearer picture of the management of used electronics in the United States in the future.

Best Buy – Mechanicsburg PA – Electronics

FROM: Steve Deasy
TO: Justin Miller
DATE: 4-30-2013

MEMO

Gannett Fleming (Steve Deasy) contacted Gina, the Manager at the Best Buy store located at 6416 Carlisle Pike, Mechanicsburg PA. Best Buy is a retail store for a wide variety of electronics including home theatre, audio, phones, cameras, computers, office equipment and other devices and peripherals. Best Buy is a local Manufacturer Sponsored Collection Site registered under the Covered Device Recycling Act. Key points of our conversation included:

1. Best Buy does not accept micowaves and only accepts TV's under 32".

2. They limit electronics recycling to 3 items per day per customer.

3. They have experienced a dramatic increase in the recovery of electronics since January 2013. They have increased from several electronics pieces per day to 1-5 skids/Gaylords of electronics and peripherals. They ship 3 tractor trailer loads per week to their warehouse in Maryland for consolidation and recycling.

4. Best Buy manager indicated that it would be very helpful if the County and others who reference Best Buy as an electronics drop-off location would provide accurate information about what and how much is accepted.   They have had people show up with truckloads of Televisions.

- Steve Deasy

13-2819P

Computer Barn – Newville PA – Electronics

FROM: Steve Deasy
TO: Justin Miller
DATE: 4-17-2013

MEMO

Gannett Fleming (Steve Deasy) contacted Ned Kerstetter at Computer Barn located in Newville PA. The Computer Barn is a for-profit private business focused on sales and service. Computer Barn repairs computers and laptops and sells refurbished electronics equipment. They recycle scrap electronics through certified recyclers. Key points of our conversation included:

1. They have sufficient capacity to accept additional electronics. They have added a 40 X 40 area for electronics storage. The key to their capacity is that they get rid of trailer loads of accumulated electronics as needed.

2. As of January 2013, they have seen an increase in residential electronics, primarily televisions. It is estimated that TV's represent 75% of the residential electronics currently received. They cannot charge for TV's because they use certified recyclers subject to CDRA requirements.

3. Excluding TV's, commercial sector electronics represents 80% of their business. They would love County support in increasing their ability to serve business electronics recycling needs.

4. Recently experienced a 40% drop in the price per pound received for certain electronics.

5. They have a cooperative relationship with Zero Export that can be financially beneficial for both parties. Computer Barn hopes Zero Export receives its R-2 Recycling Certification soon, so it can utilize Zero Export as market for some of its materials.

- Steve Deasy

13-2819P

Computer Ministry – Mechanicsburg PA – Electronics

FROM: Steve Deasy
TO: Justin Miller
DATE: 4-17-2013

MEMO

Gannett Fleming (Steve Deasy) contacted Bob Shriner at Computer Ministry located in Mechanicsburg PA. The Computer Ministry is a non-profit that accepts electronics for reuse and recycling Monday, Wednesday and Friday. Mission Central is its parent company. Key points of our conversation included:

1. 5 retired volunteers work off and on to process the electronics for re-use and recycling.

2. Currently use eForce Compliance in Philadelphia but have recently experienced a noticeable drop in the price per pound received for electronics and peripherals.

3. They are PADEP approved/registered. It was noted that PADEP required they stop demanufacturing electronics into individual components due to potential hazards.

4. They are approaching max capacity (estimated at 80% now).

5. There has been an increase in material since January 2013 and a substantial portion of the increase is televisions. Televisions were not historically accepted but were added when Computer Ministry registered as an electronics site through PADEP.   The Computer Ministry intends to approach PADEP to see if it can stop accepting televisions because of the amount of work and the amount of space consumed; and because they do not get paid for them. They estimate TV's represent 50% of the material weight now, but see an increasing trend.

6. They ship 24 skids of electronics every two weeks.

- Steve Deasy

13-2819P

Staples – Mechanicsburg PA – Electronics

FROM: Steve Deasy
TO: Justin Miller
DATE: 4-30-2013

MEMO

Gannett Fleming (Steve Deasy) contacted Cassidy, the Manager at the Staples store located on the Carlisle Pike in Mechanicsburg PA. Staples is an office and home office supply store. Staples of Mechanicsburg recovers printers, ink jet cartridges, copiers, fax machines, computers and miscellaneous office equipment for recycling. Key points of our conversation included:

1. Staples does not accept TV's.

2. They currently collect 2-4 gaylord boxes on skids of office equipment and electronics every 2 weeks, or 1-2 skids per week.

3. Every two weeks these skids are loaded on a truck and delivered to the Staples warehouse in Hagerstown Maryland where they are consolidated for recycling.

-    Steve Deasy

13-2819P

ZERO EXPORT – Mt. Holly Springs PA – Electronics

FROM: Steve Deasy
TO: Justin Miller
DATE: 4-17-2013

MEMO

Gannett Fleming (Steve Deasy) contacted Ryan Ward, Majority Owner, at Zero Export located in Mt. Holly Springs. Zero Export is a PADEP and EPA permitted dismantler serving residential and commercial businesses and government agencies.   Key points of our conversation included:

1. Bonded capacity is 400,000 to 500,000 Cubic Yards. They have sufficient capacity to accept electronics now and into the future.

2. They are 3 months out from receiving their R-2 Certification/ISO 14002.

3. 80% of recovered electronics remain in PA.

4. They currently charge $10 for small TV's and $20 for large TV's. In the last 3 months Zero Export has received more TV's than in the last 5 years, and it is a financial burden. Currently TV's represent an estimated 80% of total volume and 50% of total weight. TV's/CRTs are shipped to JBC in Rockwood, PA.   They expect they will not be allowed to charge for TV's following R2-Certification.

5. Ryan would like to support the County in its electronics recovery efforts and has capacity to do so. Ryan indicated he could support one or two day electronics recycling events by supplying 48' recycling trailers at no cost. Ryan indicated tht if the County issued an RFP for electronics recovery, he would like to respond to the RFP. I suggested that the County and Ryan should meet to discuss cooperative solutions and he was very favorable.

-    Steve Deasy

13-2819P

County Staff and Gannett Fleming Arrival: 1:00 pm
Conditions. Overcast. Cold

Proposed Permanent Electronics Recovery Facility
Intersection of Army Heritage Drive and State Route 2002.
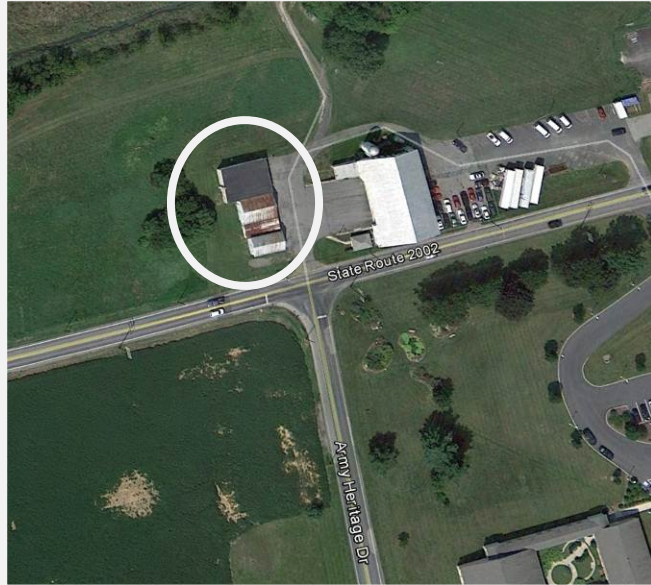
Gannett Fleming and County staff visited a property containing storage buildings and a barn to review suitability as a potential permanent electronics receiving facility. The structures sit on an 85 acre lot (see attachment) that also includes the Prison. The site was identified for review by the County and included two potential electronics handling areas: barn and County vehicle maintenance garage. Gannett Fleming quickly eliminated the barn located on the west side of the property because it appeared to be an unsafe and inefficient space for handing electronics:
  o Low ceiling heights prevent safe fork lift operation
  o Wooden support beams are spaced too tightly for safe or efficient forklift operation
  o The narrow loading dock is unsafe for forklift operation and appeared to be less the 48"
    high (typical trailer loading dock height)
  o Low ceilings prevent skid stacking that would promote efficient storage and handling.

The vehicle maintenance garage appears well suited for a permanent electronics facility for the following reasons:
  o Safe ingress and egress and visitor cueing distance
  o Loop flow traffic flow pattern is available
  o Large overhead doors allow for forklift operation.
  o Lockable doors benefit after hours security.
  o There is space to stage/maneuver one or more 53' trailers for electronics.
  o The building is covered to prevent rain/weathering of stored electronics.

The negatives included the absence of an operational forklift and there was no loading dock to facilitate direct loading of skids into transfer trailers.

Proposed Permanent Electronics Recovery Facility – Intersection of Army Heritage Drive and State Route 2002 - Photographs

Photo 1: 02-15-13. Proposed Ewaste Building Access Road adjacent to building.

Photo 2: 02-15-13. Proposed Ewaste Building Overhead doors to building.
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Photo 3: 02-15-13. Proposed Ewaste Building Building interior.
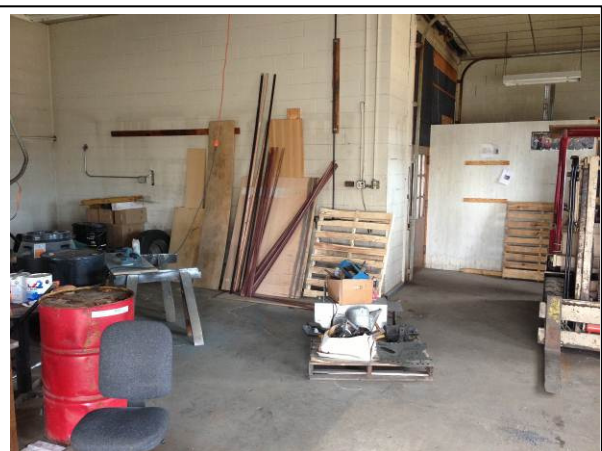

Photo 4: 02-15-13. Proposed Ewaste Building Building interior.

Photo 1: 02-22-13. Proposed Ewaste Building Forklift. Leaking, smokey, and beyond reasonable life expectancy.

Photo 1: 02-22-13. Proposed Ewaste Building #2 Not suitable due to low ceilings and support beams.
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YCSWA Arrival: 9:10 a.m.
Dauphin County Recycling Center Departure: 3:00
Conditions. Overcast. Cold

YCSWA Primary eWaste Facilty

- eWaste is collected 3rd Saturday of every month

- 12 temp employees
  - 10 @ $10/hour
  - 2 @ $15/hour (licensed forklift operators)
  - Recycling Coordinator participates in loading

- Contract is with Eco International (NY)
  - 4 Cents/lb. average for material
  - Eco provides the trailers, pallets, and gayload (via a Phila Company)

- Processed 410 tons in 2012

- $26,000 in 2012
  - Rebate is distributed to municipalities, prorated by the number of pallets.

- Small businesses may participate but covered devices must be palletized

- Trends
  - Rapid increase in total material/customers since the CDRA implementation
  - Rapid increase in the percentage of TV's/CRT's
  - Increase in the CRT's that have been broken and yokes removed

- 70 tons in January 2013

- Residue is not a problem…less than 2%

- 42 pallets/53' trailer
  - 14,000lbs to 22,000 lbs. per trailer

YCSWA Primary eWaste Facility – York Pa. – Site Visit Photographs

Photo 1: 02-22-13. York County Solid Waste Authority. eWaste Recovery Program.

Photo 2: 02-22-13. York County Solid Waste Authority. eWaste Recovery Program.

Photo 3: 02-22-13. York County Solid Waste Authority. eWaste Recovery Program.

Photo 4: 02-22-13. York County Solid Waste Authority. eWaste Recovery Program.

Photo 1: 02-22-13. York County Solid Waste Authority. eWaste Recovery Program.

Photo 1: 02-22-13. York County Solid Waste Authority. eWaste Recovery Program.

Warrington Township – YCSWA eWaste Satellite Facility

- Open 5 days per week, Monday through Friday during normal operations.

- Receive ~ 5 skids per week of electronics. Skids are received behind the municipal office and consolidated into two Gaylord boxes on skids that are located within a maintenance/equipment area (covered building).

- Signage directs visitors to the electronics drop – off area.

- Maintenance staff and/or the Roadmaster assist visitors as they arrive and integrate this with routine work activities. They reported they did not feel this was a large effort.

- When the skids/gaylords are filled in the maintenance building they are taken to a lower covered building that contains equipment and road materials (salt). Skids are stacked until 35-40 skids are available; enough to fill a 53' trailer.

- Eco International is contacted and the trailer is loaded from the storage area.
    o It takes 45 minutes to 1 hour to load the trailer
    o The driver handles the pallet jack on the trailer while the municipal Roadmaster or staff operates a loader with forks.

- Warrington receives $2,000 - $2,500 per year via rebate that is issued by the YCSWA. The rebate is generated based on a contractual price per pound for electronics and prorated for the Township based on the number of skids.

- Roadmaster commented that he liked the electronics program because …."If we don't get it (electronics) here, we will have to get it along the road."

Warrington Township – YCSWA Satellite eWaste Site – Site Visit Photographs

Photo 1: 02-22-13. Warrington Township eWaste Recovery Program.

Photo 2: 02-22-13. Warrington Township eWaste Recovery Program.

Photo 3: 02-22-13. Warrington Township eWaste Recovery Program.

Photo 4: 02-22-13. Warrington Township eWaste Recovery Program.

Photo 1: 02-22-13. Warrington Township eWaste Recovery Program.

Photo 1: 02-22-13. Warrington Township eWaste Recovery Program.

Fairview - YCSWA eWaste Satellite Site

- Fairview is open Monday through Saturday for receiving electronics at the compost site. Saturday is a busy day for electronics recovery.

- A 53' trailer is staged adjacent to the compost area just after the gated entrance to the facility. One (1) staff person is used to do all of the electronics receiving and loading.
    - 3 hours per day Monday through Friday
    - Saturday 5 to 6 hours

- A forklift or other forked loader is not utilized to receive or load electronics. The staff person receives the electronics and lifts them onto the back of the trailer, sometimes with assistance from the customer. Once electronics are inside the trailer, the staff person works in the trailer using a pallet jack. Once a Gaylord is filled on a skid, a second tier of electronics is placed on the first skid via manual lifting and secured via shrink wrap.

- Farview generates ~ 5 trucks per year; 40 pallets/truck.

Fairview Township – Satellite eWaste Site – Site Visit Photographs

Photo 1: 02-22-13. Fairview Township eWaste Recovery Program.

Photo 2: 02-22-13. Fairview Township eWaste Recovery Program.

Photo 3: 02-22-13. Fairview Township eWaste Recovery Program.

Photo 4: 02-22-13. Fairview Township eWaste Recovery Program.

Photo 1: 02-22-13. Fairview Township eWaste Recovery Program.

Photo 1: 02-22-13. Fairview Township eWaste Recovery Program.
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Dauphin County Recycling Center – Electronics Program

- The Recycling Center is open:
  - o Monday, Tuesday, Thursday, Friday 8:30 a.m. - 4:30 p.m.
  - o Wednesday 8:30 a.m. - 8:30 p.m.
  - o Saturday 9:00 a.m. - 2:00 p.m.

- The Recycling Center uses Dauphin County prisoners (at no cost) to help with the electronics program.

- Two 53' trailers are staged against the loading dock for electronics.

- There has been a marked increase in electronics receiving at the Recycling Center since the implementation of the CDRA.

- The recycling center uses a forklift and forked bobcat for loading electronics onto trailers.

- Dauphin County residents may deliver electronics to the Recycling Center at no cost. The Recycling Center staff indicated it may be possible for the Recycling Center to formally open its doors to Cumberland County residents for electronics in the future, provided the necessary approvals are executed.

Dauphin County Recycling Center – Electronics Program – Site Visit 2-22-13
Note: Photos were taken on different days.

Photo 1: 02-22-13. Dauphin County Recycling Center. eWaste Recovery Program.

Photo 2: 02-22-13. Dauphin County Recycling Center. eWaste Recovery Program.

Photo 3: 02-22-13. Dauphin County Recycling Center. eWaste Recovery Program.

Photo 4: 02-22-13. Dauphin County Recycling Center. eWaste Recovery Program.
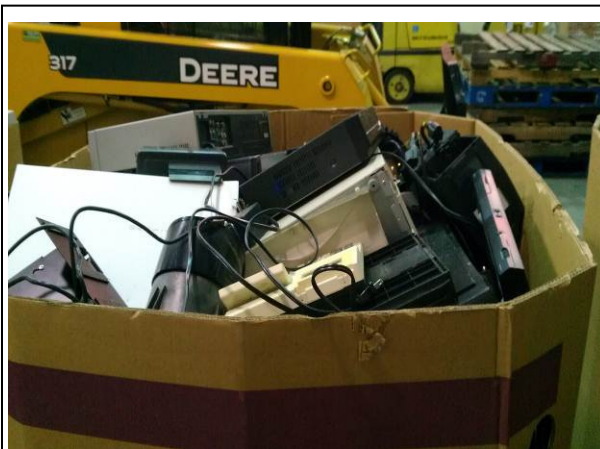

Photo 1: 02-22-13. Dauphin County Recycling Center. eWaste Recovery Program.

Photo 1: 02-22-13. Dauphin County Recycling Center. eWaste Recovery Program.

CCW&R Staff and Gannett Fleming Arrival: 8:00 a.m. Newville Borough Office

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On April 12, 2013 Gannett Fleming, Inc. Solid Waste Specialist, Steve Deasy and Justin Miller from the CCW&RA conducted meetings with three (3) Cumberland County municipalities. The purpose was to assess preliminary interest in a cooperative effort with the County to extend electronics recycling opportunities to local communities. The basic message and question delivered at these meetings included these key points:

- The County is not in a financial position to operate a new electronics facility
- Evidence suggests that Cumberland County would be benefited by additional electronics recovery capacity that is currently being offered by businesses, non-profit companies, and one known municipality (Newville Borough).
- Recycling happens at the local level.
- The County is still evaluating but generally well-positioned to serve in an administrative capacity for an electronics recycling program in conjunction with several municipalities. Administrate function might include:
    - Issue Request for Proposals (RFP) to secure a price-per-pound for recovered electronics from a qualified/permitted vendor
    - Issue rebates (if available) back to participating municipalities that may be prorated based on weight or# of skids of electronics.
    - General information and administrative support

<u>Newville Borough</u>

The meeting was conducted with the Borough Manager and Codes Enforcement Officer. Newville Borough has already completed its short-form Municipal Electronics Collection Registration and collects electronics across from the Public Works Maintenance building and salt storage area. Meeting discussions included the following key points:

- The Borough Code Enforcement Officer manages the program. One pickup truck load of material is collected each week from the Borough and six of the 8 surrounding municipalities that jointly participate in the multi-municipal residential waste and recyclables collection contract with Advanced Disposal. Electronics are currently stored outside where they are dropped off by residents but the Borough is looking into options for covering the electronics, mainly to prevent them from getting wet prior to delivery to market. After collection, electronics are taken to Computer Barn.

The Newville Borough Manager and Codes Enforcement Officer are very receptive to a cooperative electronics recycling program.

Mechanicsburg Borough

The meeting was conducted with the Office Manager, Glenda Boyer. Mechanicsburg Borough does not operate an electronics recovery program. Meeting discussions included the following key points:

- Mission Central (Methodist Church) at 5 Pleasant View Drive in Mechanicsburg accepts electronics, but not televisions. It recently indicated it is overwhelmed with electronics.
- The Borough Office location does have suitable covered areas and even a loading dock that may be suitable for storing a truckload of electronics. However, this location does not have equipment with forks for managing skids.
- It is an election year with four (4) open seats.
- The compost facility at the Mechanicsburg waste water treatment plant is a preferred location for staging a trailer for electronics.

Overall the Office Manager was receptive to evaluating electronics recycling further. She thought that Borough residents would utilize an electronics program if it was offered. She is concerned about the volume of customers and material and does not think the Borough Office facilities are ideal because of lack of equipment and staff to manage incoming residential electronics deliveries. She is following up with waste water treatment plant/compost facility staff on this topic.

Hampden Township

The meeting was conducted with Keith Metts, Township Manager; Steven Campbell,

Director of Public Works; Terri Noll, Finance Director.   Hampden Township does not operate an electronics recovery program. Meeting discussions included the following key points:

- The Township compost facility does not have a covered storage area to hold skids of electronics. The 100 – 200 customers per day that already visit the compost facility max out current staff resources.
- The Township will investigate an electronics program further assuming it will not cost the Township anything.
- The Township is opposed to an electronics program that is open to the public on an ongoing basis because they feel it is too demanding on staff resources and could have other management issues like accumulation of unwanted materials.
- The Township is initially supportive of electronics events that are schedule in advance that may include one or two days of electronics collection one or two times per year. This allows planning and coordination of staff and equipment.
  - Possibly, a vendor could provide trailers, skids, gaylords, etc. for these events.

Hampden Township was not favorable to implementing an ongoing electronics program that demanded staff and continues supervision, but would be supportive of one or more scheduled electronics collection events if there was no cash outlay by the Township.

Proposed Cumberland County Satellite Electronics Recovery Sites
Photos - April 12, 2013

Photo 1: 04-12-13. Newville Borough
Registered Electronics Recycling Drop-off Area

Photo 2: 02-22-13. 04-12-13. Newville Borough
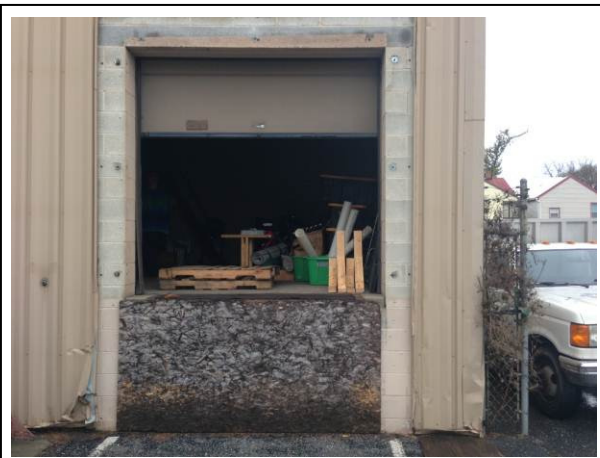Salt shed across from electronics drop-off

Photo 3: 04-12-13. Mechanicsburg Borough
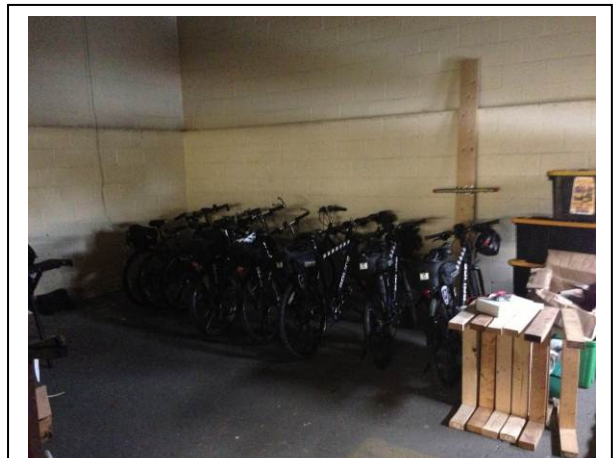Loading dock at municipal building.

Photo 4: 04-12-13. Mechanicsburg Borough
Inside loading dock area at municipal building.

pennsylvania
DEPARTMENT OF ENVIRONMENTAL
PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WASTE MANAGEMENT

Municipal Electronics Collection Registration

This registration is for the collection of covered devices which include desktop computers, laptop computers, computer monitors, computer peripherals and televisions. A collection registered under this registration is not eligible for reimbursement of any costs under Act 190 of 1996 (The Small Business and Household Pollution Prevention Program Act).

1. **Registrant name:** _____

   Address: _____

   _____

   City: _____ **State:** ___ **Zip:** _____

   Lead contact person: _____ **Title:** _____

   Phone number: (___) _____ **Fax number:** (___) _____

   Email address: _____

2. **Time Period of Registration:**   **From:** _____ **To:** _____

   The time period may be no greater than five years at which point the collection must be re-registered. For one day collections, enter the single date into "From." For multiple one day collections, enter the dates below.

   Multiple one-day collections - _____

3. **Designate the certified recycling facility used for managing or recycling covered devices.**

   Name of facility: _____

   Address: _____

   _____

   City: _____ **State:** ___ **Zip:** _____

   Lead contact person: _____ **Title:** _____

   Phone number: (___) _____ **Email:** _____

   Facilities that manage or recycle covered devices that are gathered from consumers through any electronics collection program in Pennsylvania must have achieved and maintained one of the following certifications: R2 (Responsible Recycling Practices Standard) Certification; e-Stewards Certification, or; an internationally accredited third-party environmental management standard for the safe and responsible handling of covered devices. On the line below, please write in the certification or certifications the recycler has obtained.

   _____

4. **Hauler name:** _____

   Address: _____

   _____

   City: _____ **State:** ___ **Zip:** _____

   Contact person: _____ **Title:** _____

   Phone number: (___) _____ **Email:** _____

5. Collection Site Name: _____

 Address: _____

 _____

 City: _____ **State:** ___ **Zip:** _____

 Contact person: _____ **Title:** _____

 Phone number: (___) _____ **Email:** _____

Attach additional sheets as necessary if there are additional collection sites.

AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF _____

I, _____ , _____ , state that I am an Official of the

 Name   Title

Applicant and that the information included in the Application and Documents submitted as a part of the Application are true and correct to the best of my knowledge and belief. I understand that the submission of an Application, which I know to be forged, altered or otherwise lacking in authenticity, with the intent to mislead a public servant in performance of his official function, is an action punishable by law (18 Pa. C.S.A. §4904).

APPLICATION SUBMITTED THIS _____ DAY OF _____ , 20_____ .

_____
 Signature

_____
 Printed Name

Electronic Signature – Place "X" in box below.

☐   I hereby accept the terms described above.

If you have questions regarding the completion of this registration form, please call 717-787-7382.

Registration forms or changes to the Registration shall be submitted electronically to ra-epwaste@state.pa.us or by mail to:

Pennsylvania Department of Environmental Protection
Bureau of Waste Management
Division of Waste Minimization and Planning
PO Box 8472
Harrisburg, PA 17105-8472