

# RECYCLING TECHNICAL ASSISTANCE Project #592

MONTGOMERY COUNTY, PENNSYLVANIA

## EVALUATION OF A PERMANENT DROP-OFF FACILITY FOR HOUSEHOLD HAZARDOUS WASTE & ELECTRONICS



Penn Township Recycling Center  
Photo Source: Gannett Fleming, Inc.

January 2016

Sponsored by the Pennsylvania Department of Environmental Protection through the  
Pennsylvania State Association of Township Supervisors

**RECYCLING TECHNICAL ASSISTANCE**  
**Project #592**

**EVALUATION OF A PERMANENT DROP-OFF FACILITY  
FOR HOUSEHOLD HAZARDOUS WASTE & ELECTRONICS**

*Project Completed By:*



***Gannett Fleming***  
**PO Box 67100 Harrisburg, PA**  
**17106-7100 717.763.7212 x2623**

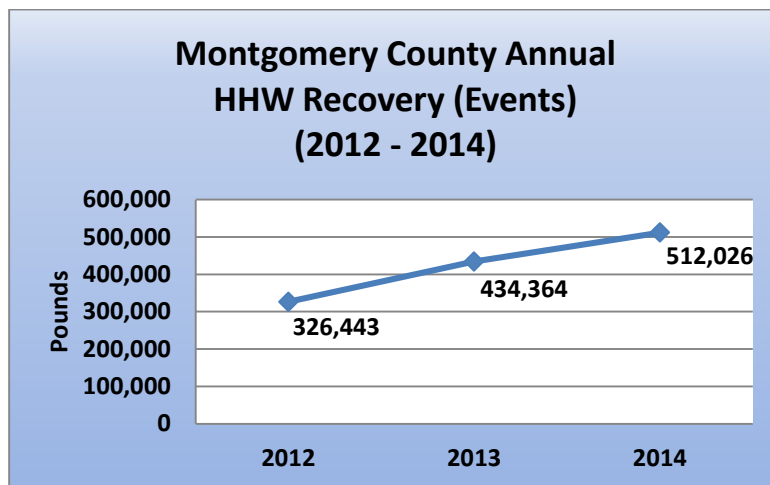
## 1.0 STATEMENT OF PROBLEM

This study was conducted for Montgomery County (County) under the Recycling Technical Assistance (RTA) program. The RTA program is sponsored by the Pennsylvania Department of Environmental Protection (PADEP) through the Pennsylvania State Association of Township Supervisors (PSATS). Montgomery County periodically hosts public drop-off events for household hazardous waste (HHW) and electronics at various locations throughout the County. These events are usually held on weekends at County schools and frequently conflict with sporting activities. Since the County does not own these temporary collection sites it cannot effectively coordinate and deliver a consistent and adequate level of service to manage County-generated special wastes. The County needs assistance to investigate the cost and feasibility of a permanent drop-off facility for HHW and electronics that will be open to the public on an ongoing basis.

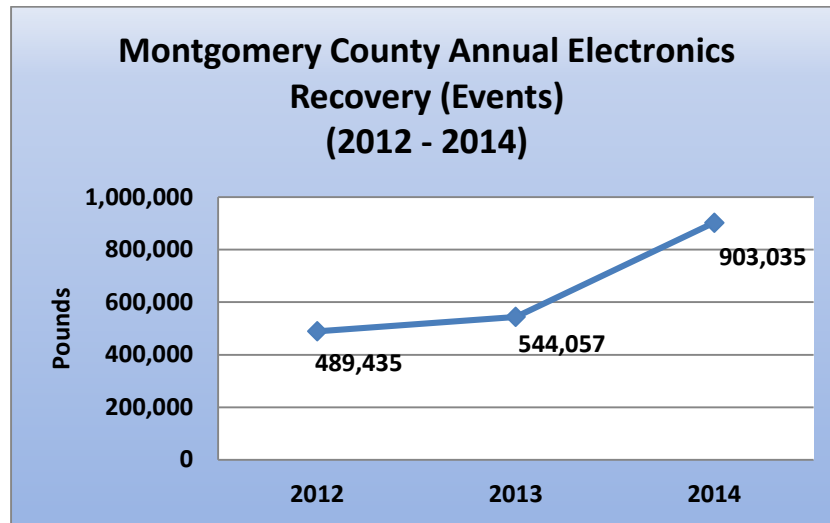
## 2.0 SUMMARY OF WORK

### 2.1 Montgomery County HHW and Electronics

The Municipal Waste Planning, Recycling, and Waste Reduction Act (Act 101 - Section 1512) as amended by Act 190 of 1996, authorizes the County to collect and manage HHW. The County is registered with PADEP as an authorized HHW sponsor and participates in a regional HHW collection partnership with Bucks, Delaware, and Chester Counties, along with the City of Philadelphia. This partnership has effectively distributed the administrative burden of HHW management and facilitated competitive pricing for HHW disposal from qualified contractors. The County holds six HHW collections each year. These events are open to all County residents and over 1,000 households participate in each collection event. Through Act 155 of 1994, The Household Hazardous Waste Funding Act, the County is reimbursed for 50 percent of its developmental and operational costs up to a total of \$100,000.00 per year. As shown in the chart below, the County collected over 326,000 pounds of HHW in 2012 and this increased to over 512,000 pounds in 2014. Year 2014 annual program costs for six County HHW events was approximately \$288,000.00, or \$188,000.00 after the \$100,000.00 grant reimbursement.



Montgomery County has also provided two tire collections and six electronic collection events during years when the County contracts with a vendor to process the material. As shown in the chart below, the volume of electronics increased from over 489,000 pounds in 2012 to over 903,000 pounds in 2014. The County did not collect electronics in 2015 because there would have been a vendor charge of \$0.40 per pound of material, which would have led to event costs of approximately \$400,000.



## 2.2 Permanent HHW and Electronics Facility Vision

Gannett Fleming worked with the County to develop the following preliminary vision for the proposed permanent HHW and electronics drop-off facility.

**Preliminary Facility Vision:** *Develop a multi-functional facility using sustainable building principles that, at minimum, provides safe, environmentally responsible receiving and processing for designated household hazardous wastes (HHW), electronics, and other recyclable materials as feasible. Additionally, this facility will serve as the new office for the Montgomery County Recycling Center and incorporate design features to support public education. The facility should strike a balance between capital costs, operational costs, and value-added services benefitting the Montgomery County Community.*

## 2.3 Permanent HHW and Electronics Permit Requirements

Gannett Fleming contacted PADEP and reviewed the current permitting requirements for permanent HHW and electronics recovery facilities. PADEP provided a draft letter that outlines HHW requirements for permanent HHW facilities (**Appendix A - PADEP Draft Letter - HHW Permit Requirements\_2015**). To collect electronics, the County is required to complete an Application for Registration through PADEP. No additional permitting is required for electronics recovery unless the electronics will be disassembled, and then a residual waste general permit (WMGR081) is required. The County is subject to all applicable local, state, and federal regulation, local building codes, etc.

## 2.4 Site Visits

There are very few municipally operated permanent drop-off facilities that accept electronics and/or HHW. On November 20, 2015 Gannett Fleming visited two permanent public drop-off facilities, the Penn Township facility in York County and the Lancaster County Solid Waste Authority (LCSWMA) facility, to gather information regarding staffing, configuration, capital costs, processing, disposal, and customer participation rates. Information from these site visits, including discussions with facility staff, was used to develop preliminary facility configuration and operational concepts used as the basis for cost estimates. Site visit photographs are included in **Appendix B - Site Visit Photos**.

### 2.4.1 Lancaster County Solid Waste Authority Permanent HHW and Electronics Facility

A permanent facility operated by the LCSWMA since 2006 is located at 1299 Harrisburg Pike in the City of Lancaster. This facility accepts both HHW and electronics and also stages individual containers for Act 101 recyclable materials outside the building. The building is characterized by the following key features: single-lane automated-door drive through unload area, 4,000 square feet dedicated to specialized handling for HHW, brick façade, and two loading docks attached to the building. In 2014 the facility received over 72,000 visits and over 3.2 million pounds of HHW and electronics.

### 2.4.2 Penn Township Permanent Drop-off Facility for Electronics and Other Materials

A permanent facility operated by Penn Township since 2013 is located at 1020 Wilson Avenue in Hanover, York County. This facility accepts electronics, newsprint, cardboard, magazines, scrap metal, and textiles. The facility does not accept household hazardous wastes. Key building features include: wood construction, warehouse, an exterior drive-through overhang, and 8 loading docks that are detached from the building. In 2014 it received over 57,000 visits and over 671,000 pounds of electronics.

## 3.0 FINDINGS

### 3.1 Market Analysis

#### 3.1.1 Household Hazardous Waste

There are a number of HHW disposal vendors and outlets for Montgomery County-generated HHW. The County uses Clean Harbors as a vendor, and Clean Ventures, and MXI, Inc. are other regional vendors for HHW management and disposal. The cost for HHW management is highly variable, largely due to the diversity of material types and the special handling and disposal requirements for hazardous wastes. As shown in **Appendix C - HHW Invoice\_Montgomery County\_2015**, HHW processing and disposal costs can range from \$0.32 per lb. to \$15.47 per lb. for chemicals and unit costs for individual items range from \$4.00 for small propane tanks to \$475.00 for flammable cylinders. HHW vendors will remain available to the County; however processing and disposal costs for HHW will continue to be high and variable. Incoming HHW quantities and material types from public HHW collections are unpredictable and make it impossible to accurately project disposal costs even when vendor pricing is known.

### 3.1.2 Electronics

Effective January 2013, the Pennsylvania Covered Device Recycling Act (CDRA), Act 108 of 2010, has had a substantial impact on electronics markets and the County's electronics program. CDRA prohibits disposal facilities from accepting consumer "covered devices" including televisions, desktop and laptop computers, computer monitors and computer peripherals. CDRA prohibits consumers and businesses from disposing covered devices with municipal waste and requires all facilities that process or recycle covered devices to be certified and approved. Market conditions since CDRA regulation enactment have been characterized by the following:

- 30 percent to 75 percent increased recovery of electronics at public drop-off sites.
- Increase in the proportion of CRTs (tube televisions and monitors) in the total amount of recovered electronics to 60 to 70 percent of all recovered electronics.
- In 2013 and 2014, the price per pound paid to recovery facilities including municipal programs typically ranged from \$0.10 to \$0.20 per pound for electronics other than CRTs and zero payment for CRTs. Since the beginning of 2015, electronics markets have declined further: most vendors or processors were not paying for recovered electronics, and some vendors began charging fees for CRTs.
- Under different vendor contracts each year, Montgomery County earned revenue for electronics in 2012 and 2013, and was revenue neutral in 2014. Proposed vendor pricing in 2015 was \$0.40 per pound and the County did not enter a contract.

The poor market conditions in Pennsylvania are attributed to the inability of recyclers and processors to generate sufficient profit on recovered electronics. Language in the CDRA prohibits manufacturers, retailers, processors and collectors participating in Original Equipment Manufacturers (OEM) programs from charging consumers a fee for the collection, transportation, or recycling of covered devices. The larger electronics processors and recyclers serving the Montgomery County region participate in OEM programs under the CDRA, limiting the County's access to vendors willing to take electronics in weak market conditions. It is noted that curbside collection of HHW and electronics or "at-your-door programs" are on the rise in some parts of Pennsylvania, while curbside collection of these special materials remain uncommon in Montgomery County.

### 3.1.3 Other Commodities

While the original vision is for a permanent facility to receive HHW and electronics, there are reasons to accept Act 101 and non-Act 101 recyclable materials. Considering the high processing and disposal costs associated with HHW and the poor market conditions for electronics, accepting revenue-generating commodities for recycling can partially offset annual operating costs. Additionally, the host municipality and/or County could be reimbursed for eligible Act 101 materials at a value of approximately \$10.00 per ton through the Act 101, Section 904 Performance Grants. The County could be reimbursed for eligible capital and equipment costs under Act 101, Section 902 Grants. Accepting other recyclables improves the overall value to the community and environment by expanding services and material diversion.

### 3.2 Preliminary HHW & Electronics Facility Siting Analysis

Gannett Fleming worked closely with the County to complete a preliminary siting analysis to identify preferred HHW and Electronics site locations suitable for the development of a permanent facility to meet County needs. As part of this evaluation, the following simple siting criteria were developed identifying preferred areas:

- Undeveloped commercial land is required for new construction since it may not be feasible to develop the proposed facility vision on a site with existing infrastructure.
- The site must be a minimum of 2.5 acres.
- To promote convenience and public participation, the site should be centrally located within densely populated areas of the County. It is assumed 10 miles (one way) is the maximum convenient distance for residential drop-off.
- To promote convenience and public participation, the site should be located near shopping centers or similar areas frequented by the public.
- The site location should be within 1 mile of one or more major highways.

The County provided Geographic Information System (GIS) shape files to Gannett Fleming to support the preliminary siting analysis. The findings for the siting analysis are presented in **Appendix D - Siting Analysis Map** and summarized as follows:

- Ambler Borough and Norristown meet the evaluation criteria and are favorable locations to site a public drop-off facility.
- A 10 mile radius from either Norristown or Ambler Borough, representing the maximum distance most residents will travel to drop off materials, covers the majority of the County's population centers that are located in the eastern half of the County (See **Appendix D - Siting Analysis Map**). Based on the fact that Montgomery County has roughly 300,000 more residents than Lancaster County, and based on the performance of LCSWMA's electronics and HHW facility that processed over 72,000 customers and collected over 3,200,000 pounds of material in 2014, it is expected that a permanent drop-off facility in Montgomery County would be heavily visited and receive substantial volumes of material.
- Norristown has a large number of shopping centers that will regularly attract residents to the area, which relates to public convenience to drop off materials.
- Past collection events near Norristown have experienced high participation and material recovery rates.

### 3.3 Conceptual Estimate of Probable Costs (Capital)

Gannett Fleming prepared a preliminary capital cost estimate for a permanent drop-off facility that is provided in **Appendix E - Conceptual Estimate of Probable Cost (Capital)**. The cost estimate and operations cost analysis in the following section are preliminary and conceptual only, and do not represent a feasibility analysis. Considering the high capital costs for HHW infrastructure and the operational complexity for receiving, processing, and storing HHW, the cost estimate includes 2 options. Option 1 does not include permanent HHW infrastructure, and Option 2 adds 4,200 square feet of HHW processing and storage

area. Under Option 1 the permanent drop-off facility cost is estimated at \$2,030,000.00 (rounded). The Option 2 cost is estimated at \$2,960,000.00, adding about \$900,000.00 to the total cost to include HHW infrastructure. Assumptions used for the basis of the cost estimates are included in **Appendix F - Preliminary Drop-off Facility Assumptions**. The drop-off facility operational concept and configuration is primarily based on the Penn Township Facility in York County (**See Appendix G - Option 1 Conceptual Layout**). The Penn Township facility was selected as the basis because its simple design promotes safe and efficient unloading of different material types from many incoming vehicles.

### 3.4 Drop-off Facility Operations Cost Analysis

Gannett Fleming conducted a preliminary analysis of operating costs for a permanent drop-off facility. This analysis is based on Option 1, where the drop-off facility does not include permanent HHW infrastructure. The recovered material quantities and cost experience at the LCSWMA and Penn Township facilities are the primary basis for these preliminary costs. **Appendix H - HHW and Electronics Programs Data** is a summary table of material quantities and costs experienced at these facilities as well as various drop-off event programs across the state. Table 1 presents estimated operating costs for a program accepting electronics and miscellaneous recyclables using two full time staff. Staffing assumes that the County will have access to 2 to 8 additional unpaid staff for daily operations. The table includes a line item for recyclables revenue. Revenue includes sales revenue as well as State Act 101 904 Performance Grant revenues at a value of approximately \$10.00 per ton (electronics are not grant eligible). The cost analysis uses a conservatively low estimate for recyclables revenue based on the \$37,000.00 reported for the Penn Township facility in 2014. The estimated total net operating cost under a scenario with zero disposal cost for electronics is \$90,000.00 per year.

<b>Table 1. Preliminary Estimate of Operating Costs for a Permanent Electronics Waste and Recyclables Program</b>				
	<u>Number</u>	<u>Units</u>	<u>Unit Price</u>	<u>Cost</u>
Labor	2	FTE	\$55,000.00	\$110,000.00
Utilities and Fuel				10,000.00
Supplies				10,000.00
Miscellaneous Other				10,000.00
Recyclables Revenues <sup>1</sup>				(50,000.00)
1.Total Operating Cost, Zero Disposal Cost				\$ 90,000.00
Materials Disposal, Mid:	3,000,000	Lbs. e-waste	\$ 0.04	\$120,000.00
2.Total Operating Cost, Mid-Range Disposal Cost				\$210,000.00
Materials Disposal, High:	4,000,000	Lbs. e-waste	\$ 0.04	\$160,000.00
3.Total Operating Cost, High Disposal				\$250,000.00

Net operating cost is also estimated for two additional disposal cost scenarios. Both scenarios assume that the cost for electronics disposal is \$0.04 per pound, which is the average cost per pound paid by LCSWMA in 2014. A drop-off facility in densely populated eastern Montgomery County is expected to receive more than the 2.5 million pounds of electronics than the LCSWMA received in 2014. Assuming electronics collections are proportional to county populations, a facility in Montgomery County (1.6 times more populous than Lancaster County), could expect 4 million pounds of electronics. Four million pounds defines a high disposal fee scenario for Montgomery County, amounting to \$160,000.00. The total operating cost in this high scenario is \$250,000.00 (\$160,000.00 + \$90,000.00). The moderate disposal cost scenario assumes three million pounds of electronics disposed for \$120,000.00, or a total operating cost of \$210,000.00. It should be noted that “high” is not to be interpreted as “maximum”. It is entirely possible that a County facility could receive material at a greater per capita rate than the one in Lancaster County.

Contracting a vendor to host events increases the cost per pound for processing electronics when compared with collecting electronics at a permanent facility. This is primarily due to the added costs a vendor passes through to mobilize equipment, labor (large crews), and supplies. Using the current regional rate of \$0.40 per pound for vendor-operated collection events, and assuming 1 million pounds recovered (2014 Montgomery County totals), the cost for six electronics waste events would be approximately \$400,000.00. This demonstrates the cost-effectiveness (apart from capital costs) of operating a permanent facility compared to offering vendor-contracted events. The cost for hosting electronics collection events is considerably higher than the high disposal cost scenario for a permanent facility, even though six events collect far less electronics than projected for a permanent facility.

### **3.4.1 Operating Cost Considerations for Permanent HHW Management**

Based on HHW costs from the LCSWMA facility, it is projected that permanent collection of HHW would likely increase non-disposal operating costs by two to three times the costs presented in Table 1. For this cost analysis it is assumed that HHW management adds \$280,000.00 to operating costs other than disposal. Using LCSWMA’s 2014 average disposal cost of \$0.19 per pound and doubling the 512,000 pounds collected at Montgomery County events in 2014 to 1.024 million pounds, the disposal cost for HHW would be approximately \$196,000.00 (1.024 million pounds multiplied by \$0.19 per pound). The total incremental operating cost to add HHW collection under these assumptions is \$476,000.00 (\$280,000.00 plus \$196,000.00). Assuming that the collection events are replaced by a permanent facility, nearly \$288,000.00 in vendor fees would be saved, for a net cost increase of \$188,000.00. (PADEP HHW grants would continue to be \$100,000.00 per year so are not a factor in the incremental cost calculation.) As with electronics, it is possible that a Montgomery County facility could receive material at a greater per capita rate than the LCSWMA facility and thus disposal costs for HHW could be higher than the estimated \$196,000.

### **3.5 Household Participation Rates**

The LCSWMA facility reported 72,075 customers (vehicles) in 2014 for electronics and household hazardous waste. Each customer represents a household. This is a 37 percent household participation rate based on 194,000 households in Lancaster County. The household participation rate for the 12 collection events in Montgomery County in 2014 was four percent. Thus, a permanent facility demonstrates the capacity to substantially increase participation and diversion rates for special wastes. On the other hand, a 37 percent participation rate also means that many households are not participating in a given year, even with access to a permanent facility. Therefore, other convenient alternatives such as curbside collections should be considered. A household participation rate of 37 percent among Montgomery County households would amount to over 114,000 visits, or an average of approximately 372 vehicles per day operating six days week. In addition, if recyclables were accepted there would be many additional visits by persons bringing exclusively recyclables.

## **4.0 SOLUTIONS**

### **4.1 Conclusions**

This Study is a preliminary investigation, not a feasibility study. A more detailed examination of facility size, location, processing capacity, design features, safety features, material types, capital costs, equipment, operating costs, permitting and other factors is required to guide an informed decision regarding the implementation of a permanent drop-off facility for HHW, electronics, and other recyclable materials. Based on the participation and diversion rates experienced by other permanent drop-off facilities for electronics and HHW, and with consideration of the population density of eastern Montgomery County, a permanent drop-off facility located near Ambler Borough or Norristown would substantially increase diversion rates of electronics and HHW, and offer other recycling opportunities. Past County-hosted collection events only serve two to four percent of the County population. A permanent facility is expected to serve over 35 percent of the County population, and could increase diversion rates for electronics from 1,000,000 pounds annually (events) to 4,000,000 pounds. High participation and recovery rates for other materials including HHW, Act 101 recyclables, and non-Act 101 materials are expected at a permanent facility, but could not be projected in this Study.

While the original vision is for a permanent facility to receive HHW and electronics, there are reasons to accept Act 101 and non-Act 101 recyclable materials, chiefly for their potential to generate revenue. Considering the high processing and disposal costs associated with HHW and the poor market conditions for electronics, accepting revenue-generating commodities for recycling can partially offset annual operating costs. The acceptance of numerous materials increases community value per dollar spent; residents will value a one-stop-shop to deliver a wide variety of materials. Construction of the proposed permanent drop-off facility is estimated to cost \$2 million for an electronics and recyclables facility. Actual costs will be higher or lower depending on a number of factors. Annual operational costs are estimated to be \$90,000.00 with zero disposal costs and up to

\$250,000.00 for a high disposal cost scenario. This cost is based on two full time employees to manage operations, but assumes two to eight additional unpaid laborers are volunteers or allocated through a County program (e.g. work release) to manage incoming material. Costs could be even higher if markets further weaken and/or if participation is higher than projected for this cost analysis. If disposal costs become excessive, these costs could potentially be partially offset by charging participants fees for electronics or for certain categories of electronics. Infrastructure to receive, handle, and store HHW is estimated to increase capital costs by \$960,000.00, for a total estimated capital cost of \$3 million. A very conditional estimate of the total incremental operating cost to add HHW collection is \$476,000.00 (\$188,000.00 after deducting savings from eliminating the six collection events). Accepting, processing, and storing hazardous wastes inside the drop-off facility increases the complexity of operations and safety risks for employees and visitors.

### 4.3 Recommendations

Gannett Fleming offers the following recommendations:

- The County should undertake additional market investigations regarding electronics and HHW, to verify market conditions, establish vendor contracts, determine the status of state legislation, and evaluate other market factors that may affect the feasibility of accepting these materials. The information from the additional market analysis should be used to more accurately determine the following:
  - Costs for HHW disposal
  - Costs for electronics
  - Customer fees required to partially offset operational costs
- As County leaders deliberate on a permanent drop-off facility, they should bear in mind the considerable additional level of design and operational complexity, safety and liability risk, and operating cost risks for household hazardous waste management.
- The County should consider staging periodic, vendor run HHW collection events at a permanent facility without building HHW infrastructure as a measure to offer HHW collections while reducing certain risks as listed above.
- A permanent special wastes facility should accept additional materials (not just HHW and electronics) to improve community value and to allow the County to leverage markets, improve Act 101 eligibility, and promote operational flexibility.
- Since neither a permanent drop-off facility nor collection events will provide convenient disposal to the entire County, the County should evaluate its role in supporting local municipalities in the implementation of curbside collection for special wastes including HHW and electronics. This typically involves developing standardized bid language for special materials collection within municipal curbside solid waste and collection contracts. At a minimum, curbside collection options could be extended by promoting municipal arrangements with private waste management contractors to offer “At-Your-Door” on-demand curbside service.

## **APPENDICES**

**Appendix A** –PADEP Draft Letter – HHW Permit Requirements\_2015

**Appendix B** – Site Visit Photos

**Appendix C** – HHW Invoice - Montgomery County\_2015

**Appendix D** – Siting Analysis Map

**Appendix E** – Conceptual Estimate of Probable Cost (Capital)

**Appendix F** – Preliminary Drop-off Facility Assumptions

**Appendix G** – Option 1 Conceptual Layout

**Appendix H** – HHW and Electronics Programs Data

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

-----

Hazardous Waste Operations Manager

-----

-----

Dear -----l:

The Department has completed its review of \_\_\_\_\_ request to conduct an ongoing household hazardous waste (HHW) collection program at its ----- starting January 1, 2015 until December 31, 2016. Approval is granted based on the program operating in accordance with the registration materials submitted to the Department and the following conditions being met:

*The following items shall not be accepted:*

1. Hazardous waste from a commercial generator, conditionally exempt small quantity generator, small quantity generator or large quantity generator.
2. Radioactive, explosive, regulated medical and/or chemotherapeutic waste including sharps.

*Transportation:*

1. HHW must be collected by the sponsor/program operator who must be a licensed hazardous waste transporter in Pennsylvania.
2. At least one person collecting the HHW must be 40 hour OSHA certified.
3. A bill of lading shall be maintained during transportation from the temporary collection sites to the approved DEP collection facility to record an estimate of the quantity or volume of HHW being collected. These records shall be maintained onsite for three years from the date of collection and made available to the Department upon request.
4. A licensed hazardous waste transporter must be used to transport all HHW from the collection facility. HHW shall be manifested from the facility on a manifest in accordance with 40 CFR Part 262, Subpart B (relating to standards applicable to generators of hazardous waste, the manifest) to a facility which is permitted to handle the hazardous waste described on the manifest. In accordance with 40 CFR 262.40 (relating to record keeping), the manifests must be kept on site for 3 years.

Montgomery County  
Permanent Electronics and HHW Facility Evaluation  
Site Visit Photos – Lancaster County Solid Waste Authority (11-20-15)



Photo 1: 11-20-15. LCSWMA  
HHW and Electronics Facility Entrance



Photo 2: 11-20-15. LCSWMA  
HHW and Electronics Facility Tip Floor



Photo 3: 11-20-15. LCSWMA  
Electronics



Photo 4: 11-20-15. LCSWMA  
Chemical Storage Bays

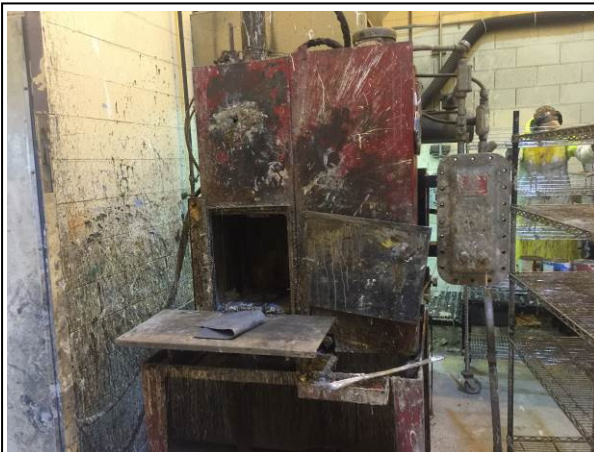


Photo 5: 11-20-15. LCSWMA  
Paint Crusher



Photo 6: 11-20-15. LCSWMA  
Miscellaneous HHW

**Montgomery County  
Permanent Electronics and HHW Facility Evaluation  
Site Visit Photos – Penn Township Drop-off Facility (11-20-15)**



Photo 7: 11-20-15. Penn Township Drop-off Facility Facility Entrance (3 lanes wide)



Photo 8: 11-20-15. Penn Township Drop-off Facility Electronics Sorting Area



Photo 9: 11-20-15. Penn Township Drop-off Facility Custom Carts for electronics handling



Photo 10: 11-20-15. Penn Township Drop-off Facility Loading Dock (8 bays)



Photo 11: 11-20-15. Penn Township Drop-off Facility Drive through – Vehicle Unload Area



Photo 12: 11-20-15. Penn Township Electronics Facility Scrap Metal Roll-off Container

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

5. All HHW collected from temporary collection events must be taken directly to a DEP approved collection facility at the end of each day and be secured in accordance with the DEP approved safety plan for the facility and in accordance with all Federal and State regulations.
6. All collected waste must be removed from the collection vehicle within 48 hours at a DEP approved facility.
7. All hazardous waste with the exception of universal waste must be manifested offsite as a hazardous waste within 30 days of the receipt of the hazardous waste at the storage facility, with the collection facility listed as the generator and utilizing the generator identification number obtained from DEP for the facility.
8. Universal waste must be managed in accordance with 40 CFR 273 and PA Code Title 25 Chapter 266b.
9. All non-hazardous wastes must be managed in accordance with the Solid Waste Management Act, 35 P.S. §§ 6018.101-6018.1003 and the regulations promulgated thereunder.

*Containers:*

1. All HHW shall be properly labeled as soon as it is offloaded or stored at the DEP approved 30 day facility.
2. Containers used for transfer from the collection facility to the final destination site shall meet the requirements of 40 CFR Part 262, Subpart C (relating to standards applicable to hazardous waste generators, pre-Transport requirements).

*Facility Design and Operation:*

1. The collection facility must obtain a hazardous waste generator identification number (EPA identification number) from DEP in accordance with 40 CFR § 262.12 prior to beginning operation.
2. The collection facility must provide subsequent notification to DEP if there is a change in location, contact person, ownership, regulated activity, generator status that is not temporary or facility name as listed in 25 Pa. Code § 262a.12(1)(i)-(vi).
3. The collection facility must provide proof of meeting local zoning ordinances and fire requirements.
4. The collection facility shall provide the public with educational materials regarding the HHW collection program and the facility's implementation of the program.
5. The collection facility will handle all HHW that has been collected from participating households as hazardous waste and will take full responsibility, both environmentally and

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

financially, for all materials stored at the collection facility. The facility operator will be deemed the generator of the hazardous waste at the time the waste is collected.

6. There shall be no treatment, disposal or recovery of any kind at such a facility without a proper permit. Only pouring and consolidation of various non-hazardous materials such as latex paint and motor oil may occur without a permit. If tanks are utilized, all applicable laws and regulations shall be followed.
7. With the exception of Condition 6, hazardous waste may be consolidated at the collection facility into a container provided it meets the conditions in 40 CFR § 262.34 and 25 Pa. Code § 262a.34 (relating to accumulation time) are satisfied, particularly 40 CFR Part 265, Subpart I and 25 Pa. Code Chapter 265a, Subchapter I (relating to use and management of containers).
8. Secondary containment must be provided for all HHW that has been collected from participating households and being managed as hazardous waste at the collection facility in accordance with 25 Pa. Code § 265a.179.
9. Areas where hazardous wastes are accumulated at the collection facility must meet the generator accumulation provisions contained in or required by 40 CFR § 262.34 and 25 Pa. Code § 262a.34 (relating to accumulation time).
10. All hazardous waste, except universal waste, must be transported offsite within 30 days of the date that it was collected. An extension request for an additional 15 days may be filed by the collection facility with DEP. Such extensions are granted on a case-by-case basis for specific waste streams going to identified RCRA permitted facilities.
11. The facility must have a 10 day Hazardous Waste Transporter In-Transit Storage Preparedness and Prevention and Contingency Plan and associated bond.
12. The Facilities Preparedness and Prevention and Contingency Plans have to be approved by DEP and meets the requirements of 25 Pa. Code §272.514 (relating to contingency plan) and the Contingency Plan and Emergency Procedures requirements of 40 CFR Part 265, Subparts C and D and 25 Pa. Code Chapter 265a, Subchapter D.
12. The collection facility must be secured if unattended.
13. The collection facility must maintain liability insurance in accordance with 25 Pa. Code § 272.534 (relating to liability insurance).
14. Employees handling any waste at the facility shall be 24 hour OSHA certified. Employees manifesting, categorizing or pouring any waste shall be 40 hour OSHA certified.
15. The collection facility will be subject to DEP inspections and must meet the requirements of the registration. Failure to meet the requirements may result in notices of violation or

**DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT**

enforcement actions including but not limited to civil penalties, orders, suspension of operations, closure of facility or revocation of registration.

*Additional:*

1. Hazardous waste collected through ----- collection programs shall be taken by a licensed hazardous waste hauler, in this case, ----- . directly to their approved facility's where the hazardous waste may only be stored for up to 30 days before being delivered to a properly permitted TSD facility approved in the registration.
2. The waste shall be considered the property and responsibility of ----- once it is collected from a resident and it shall be handled according to its appropriate waste categorization until it reaches -----'s facility. -----'s shall be considered the generator of the waste. All labeling, storage and handling shall be in accordance with all state and federal municipal, residual and hazardous waste regulations.
3. Residents may only be charged for the collection of covered devices, as defined in the Covered Device Recycling Act, Act 108 of 2010, if the covered devices are not part of any manufacturer programs. Section 504 of the Act prohibits a manufacturer or retailer from charging a fee to the consumer for the collection, transportation or recycling of a covered device unless a financial incentive of equal or greater value is provided to the consumer.
4. Hazardous waste shall not be stored at any of -----s facilities for longer than 30 days. In less than 30 days, the waste will be sent to a properly permitted facility as detailed under "Terms and Conditions" above for recycling, processing or disposal. The 30 days starts at the time ----- accepts the material from households.
5. Universal waste must be managed in accordance with 40 CFR 273 and PA Code Title 25 Chapter 266b. Universal waste can only be stored for a maximum length of one year before being shipped off site to an approved recycling, processing or disposal facility.
6. Latex paint that is collected through the -----'s HHW program can be stored at the facility for a maximum length of one year or until the facility has accumulated a tractor trailer load of latex paint (approximately 40 pallets), whichever comes first. When the facility reaches one year or a tractor trailer load 40 pallets it must ship the latex paint within 30 days to an approved recycling or disposal facility. If the facility reaches either one year or 40 pallets it can no longer accept latex paint until that material has been shipped off site for proper handling.
7. Only facilities listed in the approved plan or that have been approved in writing by the DEP may be used for processing, disposal and/or recycling of waste collected through this program.
8. The collection facility shall complete a quarterly report on a form prepared by DEP on or before the 20th day of April, July, October and January for the three previous months. A

DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT DRAFT

copy of these reports will be mailed to DEP central office. A copy of these reports will be maintained onsite for three years and made available to DEP upon request.

The Department reserves the right to make changes to this approval in order to protect the environment of the Commonwealth and the health of its citizens. Any changes or revisions made to the program by ----- must be approved in advance by the Department. This approval expires on December 31, 2017. If you wish to continue operations, you may request a two-year renewal at least 60 days prior to the expiration of the existing term.

The Department has the authority to approve, deny, revoke and modify any approval or the conditions of the approval at any time. Good luck with your new collection program. If you have any questions concerning this approval letter or the Department's HHW program, please contact me by telephone at 717.787.0120 or by e-mail at [jlundsted@pa.gov](mailto:jlundsted@pa.gov).

Sincerely,

John Lundsted  
Solid Waste Program Specialist

cc:

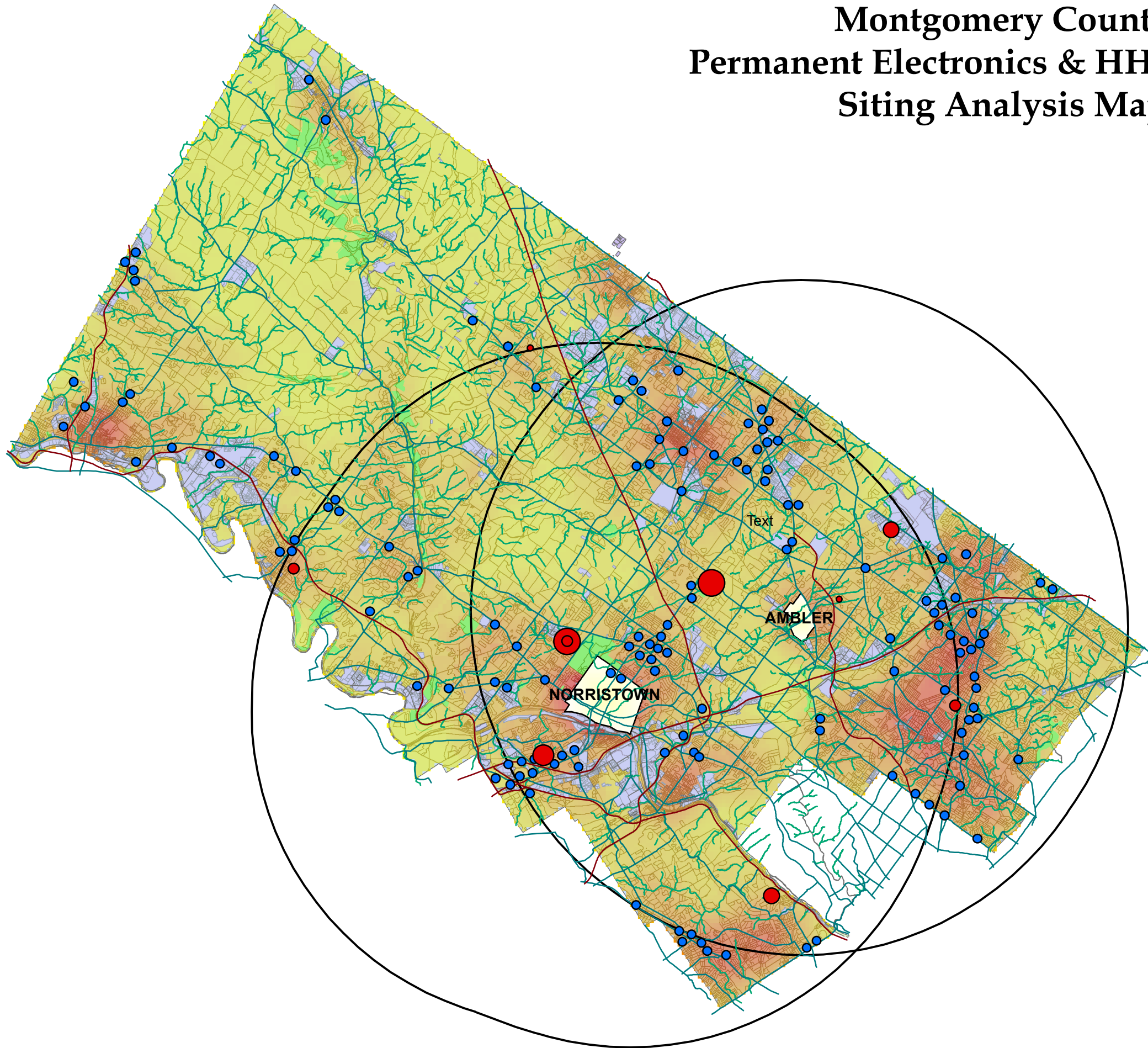
## INVOICE

## HHW Summary of Charges

**SOLD TO: Montgomery County Planning Commission, 425 Swede Street, Suite 201, Norristown, PA 19404 HHW Event Date  
and Location: 5/30/15 - Montgomery County Community College, 473 Cathcart Road, Blue Bell, PA 19422**

Quantity and Type of Material Accepted		Unit Costs	TOTALS
Acids	1,716 lbs	\$ 1.34	\$ 2,299.44
Aerosols	4,383 lbs	\$ 1.27	\$ 5,566.41
Alkaline Waste	1,887 lbs	\$ 1.34	\$ 2,528.58
Antifreeze	516 lbs	\$ 0.36	\$ 185.76
Asbestos	0 lbs	\$ 0.52	\$ -
Batteries - Household	0 lbs	\$ 0.38	\$ -
Batteries Lead-Acid	0 lbs	\$ 0.32	\$ -
Batteries Lithium	57 lbs	\$ 3.35	\$ 190.95
Batteries Ni-Cad/NiMh	136 lbs	\$ 1.11	\$ 150.96
Calcium/Potassium Carbide	0 lbs	\$ 25.06	\$ -
Carbon Tetrachloride	0 lbs	\$ 1.34	\$ -
Cyanide	0 lbs	\$ 25.06	\$ -
Ferric chloride	0 lbs	\$ 1.34	\$ -
Fire Extinguishers	1036 lbs	\$ 3.23	\$ 3,346.28
Flammable Liquids	20,252 lbs	\$ 0.39	\$ 7,898.28
Flammable Solids	56 lbs	\$ 1.34	\$ 75.04
Flammable Corrosive	0 lbs	\$ 1.34	\$ -
Flares	52 lbs	\$ 8.46	\$ 439.92
Fluorescent Lamps	791 lbs	\$ 2.84	\$ 2,246.44
Fluorescent Ballasts	0 lbs	\$ 0.75	\$ -
Gas/Water Mixture	0 lbs	\$ 0.39	\$ -
Non-Hazardous Material	11,420 lbs	\$ 0.32	\$ 3,654.40
Lead Chips	0 lbs	\$ 1.34	\$ -
Mercury	27 lbs	\$ 11.47	\$ 309.69
Magnesium Powder	0 lbs	\$ 15.47	\$ -
Oil	1,517 lbs	\$ 0.37	\$ 561.29
Oxidizer Liquid	40 lbs	\$ 1.64	\$ 65.60
Oxidizer Solid	525 lbs	\$ 1.64	\$ 861.00
Paint (Latex) Drums	0 lbs	\$ 0.43	\$ -
Paint, Oil (loose packed)	23,287 lbs	\$ 0.67	\$ 15,602.29
PCB's off spec/Ballast	143 lbs	\$ 0.76	\$ 108.68
Pesticide Liquid	11,751 lbs	\$ 0.91	\$ 10,693.41
Pesticide Solid	6,470 lbs	\$ 0.91	\$ 5,887.70
Propane - Large	30 large units	\$ 23.00	\$ 690.00
Propane - Small	485 small units	\$ 4.00	\$ 1,940.00
Reactive Solid (Mag., Sodium)	33 lbs	\$ 15.47	\$ 510.51
Refrigerant gases	0 units (medium)	\$ 84.00	\$ -
Compressed Air	0 units (medium)	\$ 135.00	\$ -
Flammable Cylinder	0 units (medium)	\$ 475.00	\$ -
Oxygen Cylinder	0 units (lecture)	\$ 77.00	\$ -
Acetylene Cylinder	0 units (small)	\$ 84.00	\$ -
Acetylene Cylinder	0 units (lecture)	\$ 26.00	\$ -
Carbon Dioxide	0 units (lecture)	\$ 77.00	\$ -
Carbon Dioxide	0 units (small)	\$ 110.00	\$ -
Helium	0 units (medium)	\$ 135.00	\$ -
<b>Total</b>	<b>89,120</b> lbs	<b>PLEASE PAY THIS AMOUNT</b>	<b>\$ 65,812.63</b>

# Montgomery County Permanent Electronics & HHW Facility Siting Analysis Map



## Legend

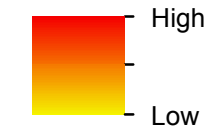
### 2014 Electronics and HHW Events

#### Collection\_Weight (lbs.)

- 70,000 - 80,000
- 80,001 - 100,000
- 100,001 - 120,000
- 120,001 - 140,000
- 140,001 - 160,000
- Shopping Centers

□ Ambler\_Norristown\_Buffer

#### Population\_Density



○ 10 Mile Radius

**MONTGOMERY COUNTY**  
**CONCEPTUAL ESTIMATE OF PROBABLE COST**

<u>LINE</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
1	<b>OPTION 1: MATERIALS RECOVERY FACILITY (ELECTRONICS WASTE )</b>				
2	<b>LAND DEVELOPMENT</b>				
3	SITE DEVELOPMENT				
4	Clearing and grubbing	2.5	acres	\$ 4,740.00	\$ 11,850
5	Grading, figure 1'-0" per square foot	4,040.0	yards <sup>3</sup>	\$ 2.50	\$ 10,100
6	Rock allowance, 15%	606.0	yards <sup>3</sup>	\$ 19.50	\$ 11,820
7	Haul and dispose of excess earth	811.8	yards <sup>3</sup>	\$ 12.05	\$ 9,790
8					
9		SITE DEVELOPMENT TOTAL			<b>\$ 43,560</b>
10	<b>SITE IMPROVEMENTS</b>				
11	Light-duty paving, 6/3/2	2,127.0	yards <sup>2</sup>	\$ 28.25	\$ 60,090
12	Heavy-duty paving, 8/4/2	5,212.0	yards <sup>2</sup>	\$ 34.55	\$ 180,080
13	Concrete paving	1,735.0	feet <sup>2</sup>	\$ 5.80	\$ 10,070
14	Concrete curbing	648.0	feet	\$ 18.60	\$ 12,060
15	Signage	1.0	lump sum	\$ 7,500.00	\$ 7,500
16	Fencing	1,240.0	feet	\$ 36.60	\$ 45,390
17	Vehicle gate	3.0	each	\$ 1,020.00	\$ 3,060
18	Seeding and maintenance	2,629.0	yards <sup>2</sup>	\$ 0.87	\$ 2,290
19	Landscaping	1.0	lump sum	\$ 8,000.00	\$ 8,000
20					
21		SITE IMPROVEMENTS TOTAL			<b>\$ 328,540</b>
22	<b>SITE UTILITIES</b>				
23	Stormwater system	1.0	lump sum	\$ 20,000.00	\$ 20,000
24	Domestic water line	275.0	feet	\$ 42.70	\$ 11,750
25	Fire water line	275.0	feet	\$ 48.25	\$ 13,270
26	Natural gas line	275.0	feet	\$ 33.60	\$ 9,240
27	Electrical service	1.0	lump sum	\$ 35,000.00	\$ 35,000
28	Site lighting, pole lights	5.0	each	\$ 6,500.00	\$ 32,500
29	Tele/data service	1.0	lump sum	\$ 12,000.00	\$ 12,000
30					
31		SITE UTILITIES TOTAL			<b>\$ 133,760</b>
32	<b>LOADING DOCK</b>				
33	Foundation excavation and backfill	214.9	yards <sup>3</sup>	\$ 18.50	\$ 3,980
34	Retaining wall, 12" fully-reinforced	75.6	yards <sup>3</sup>	\$ 670.00	\$ 50,660
35	Dock slab, 8" w/rebar and stone	1,200.0	feet <sup>2</sup>	\$ 12.20	\$ 14,640
36	Turned-down slab	21.4	yards <sup>3</sup>	\$ 297.50	\$ 6,370
37	Edge-of-dock levelor	10.0	each	\$ 1,500.00	\$ 15,000
38	Trench drain system	116.0	feet	\$ 225.00	\$ 26,100
39					
40		LOADING DOCK TOTAL			<b>\$ 116,750</b>
41					
42		LAND DEVELOPMENT DIRECT COST		<b>\$ 622,610</b>	
43					

**MONTGOMERY COUNTY**  
**CONCEPTUAL ESTIMATE OF PROBABLE COST**

Revision 2

<u>LINE</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
44	INDIRECT COSTS				
45	General conditions	2.0	months	\$ 25,000	\$ 50,000
46	Contingency	10.00%	on	\$ 622,610	\$ 62,270
47	Bonds and insurances	2.40%	on	\$ 1,260,530	\$ 30,260
48	Permitting	1.20%	on	\$ 1,260,530	\$ 15,130
49	Overhead and profit	6.00%	on	\$ 780,270	\$ 46,820
50					
51			INDIRECT COSTS	TOTAL	\$ 204,480
52					
53			LAND DEVELOPMENT CONSTRUCTION	TOTAL	\$ 827,090
54					
55	SOFT COSTS				
56	Design costs	7.00%	on	\$ 827,090	\$ 57,900
57	Land acquisition, commercial	2.5	acres	\$ 125,000	\$ 312,500
58	Financing costs	2.00%	on	\$ 1,260,530	\$ 25,220
59	Legal and administrative fees	3.00%	on	\$ 1,260,530	\$ 37,820
60	Escalation - <i>none included; all pricing is per 12/2015</i>				
61					
62			SOFT COSTS	TOTAL	\$ 433,440
63					
64			LAND DEVELOPMENT and SOFT COSTS	TOTAL	\$ 1,260,530
65					

**MONTGOMERY COUNTY**  
**CONCEPTUAL ESTIMATE OF PROBABLE COST**

Revision 2

<u>LINE</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
66	<b>BUILDING CONSTRUCTION</b>				
67	RECYCLING CENTER AND OVERHANG				
68	Foundation excavation and backfill	596.9	yards <sup>3</sup>	\$ 18.50	\$ 11,050
69	Strip footings and masonry foundation walls	162.0	feet	\$ 101.40	\$ 16,430
70	Spread footings and piers	2.0	each	\$ 2,815.00	\$ 5,630
71	Retaining wall, 12" fully-reinforced	17.1	yards <sup>3</sup>	\$ 670.00	\$ 11,460
72	Dock slab, 8" w/rebar and stone	460.0	feet <sup>2</sup>	\$ 12.20	\$ 5,620
73	Edge-of-dock leveler	2.0	each	\$ 1,500.00	\$ 3,000
74	Slab-on-grade, 6" w/rebar, hardener and stone	1,480.0	feet <sup>2</sup>	\$ 14.70	\$ 21,760
75	Slab-on-grade, 4" w/mesh and stone	900.0	feet <sup>2</sup>	\$ 6.70	\$ 6,030
76	Masonry sidewalls to 10'	1,000.0	feet <sup>2</sup>	\$ 12.35	\$ 12,350
77	Pipe bollard	30.0	each	\$ 750.00	\$ 22,500
78	Overhead door, 10' x 10' w/insulation and operator	5.0	each	\$ 4,580.00	\$ 22,900
79	Office fit-out (flooring/walls/ceiling/doors)	900.0	feet <sup>2</sup>	\$ 35.00	\$ 31,500
80	Painting	2,380.0	feet <sup>2</sup>	\$ 2.75	\$ 6,550
81	Metal building, 16' clear height	2,380.0	feet <sup>2</sup>	\$ 36.40	\$ 86,640
82	Metal building, overhang, 16' clear height	2,150.0	feet <sup>2</sup>	\$ 20.10	\$ 43,220
83	Fire suppression	2,380.0	feet <sup>2</sup>	\$ 4.75	\$ 11,310
84	Plumbing, office area	900.0	feet <sup>2</sup>	\$ 24.90	\$ 22,410
85	Plumbing, sorting area	1,480.0	feet <sup>2</sup>	\$ 5.50	\$ 8,140
86	Trench drain system	20.0	feet	\$ 225.00	\$ 4,500
87	HVAC, office area	900.0	feet <sup>2</sup>	\$ 16.00	\$ 14,400
88	HVAC, unit heaters	1,480.0	feet <sup>2</sup>	\$ 4.30	\$ 6,370
89	Exhaust system, sorting area	1,480.0	feet <sup>2</sup>	\$ 1.35	\$ 2,000
90	Electrical, office area	900.0	feet <sup>2</sup>	\$ 15.00	\$ 13,500
91	Electrical, sorting area	1,480.0	feet <sup>2</sup>	\$ 5.50	\$ 8,140
92	Electrical, overhang lighting	2,150.0	feet <sup>2</sup>	\$ 3.35	\$ 7,200
93	Tele/data	900.0	feet <sup>2</sup>	\$ 6.30	\$ 5,670
94	Waste handling equipment - none included, assumed by MCSWA				
95					
96	<b>BUILDING CONSTRUCTION</b>			<b>DIRECT COST</b>	<b>\$ 410,280</b>
97					

**MONTGOMERY COUNTY**  
**CONCEPTUAL ESTIMATE OF PROBABLE COST**

Revision 2

<u>LINE</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
98	INDIRECT COSTS				
99	General conditions	5.0	months	\$ 25,000	\$ 125,000
100	Contingency	10.00%	on	\$ 410,280	\$ 41,030
101	Bonds and insurances	2.40%	on	\$ 635,150	\$ 15,250
102	Permitting	1.20%	on	\$ 635,150	\$ 7,630
103	Overhead and profit	6.00%	on	\$ 599,190	\$ 35,960
104					
105				INDIRECT COSTS TOTAL	\$ 224,870
106					
107				BUILDING CONSTRUCTION TOTAL	\$ 635,150
108				BUILDING COST PER SQUARE FOOT*	\$ 183.84
109	SOFT COSTS				
110	Design costs	7.00%	on	\$ 635,150	\$ 44,470
111	Furniture, fixtures and equipment, office space only	8.00%	on	\$ 635,150	\$ 50,820
112	Financing costs	2.00%	on	\$ 768,890	\$ 15,380
113	Legal and administrative fees	3.00%	on	\$ 768,890	\$ 23,070
114	Escalation - none included; all pricing is per 12/2015				
115					
116				SOFT COSTS TOTAL	\$ 133,740
117					
118				BUILDING CONSTRUCTION and SOFT COSTS TOTAL	\$ 768,890
119				BUILDING COST PER SQUARE FOOT*	\$ 222.54
120	* The building cost per square foot is computed per the AIA method of cost divided by the sum of:				
121	1) enclosed space square footage and 2) one-half of covered space (in this case, the canopy) square footage				
122					
123				OPTION 1: MATERIALS RECOVERY FACILITY (ELECTRONICS WASTE) TOTAL	\$ 2,029,420
124					

**MONTGOMERY COUNTY**  
**CONCEPTUAL ESTIMATE OF PROBABLE COST**

Revision 2

LINE	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
125	<b>ADD ALTERNATE: HOUSEHOLD HAZARDOUS WASTE ADDITION</b>				
126	Foundation excavation and backfill	124.4	yards <sup>3</sup>	\$ 18.50	\$ 2,310
127	Strip footings and masonry foundation walls	280.0	feet	\$ 101.40	\$ 28,400
128	Slab-on-grade, 6" w/rebar and stone	3,970.0	feet <sup>2</sup>	\$ 14.70	\$ 58,360
129	Concrete curbs and pads	1.0	lump sum	\$ 5,080.00	\$ 5,080
130	Masonry sidewalls to 10'	2,400.0	feet <sup>2</sup>	\$ 12.35	\$ 29,640
131	Masonry walls	3,120.0	feet <sup>2</sup>	\$ 12.35	\$ 38,540
132	Pipe bollard	26.0	each	\$ 750.00	\$ 19,500
133	Containment provisions	1,770.0	feet <sup>2</sup>	\$ 10.50	\$ 18,590
134	Overhead door, 10' x 10' w/operator	4.0	each	\$ 4,580.00	\$ 18,320
135	Hard ceilings	1,770.0	feet <sup>2</sup>	\$ 5.00	\$ 8,850
136	Painting	3,970.0	feet <sup>2</sup>	\$ 2.75	\$ 10,920
137	Metal building, 20' clear height	3,970.0	feet <sup>2</sup>	\$ 37.90	\$ 150,470
138	Fire suppression	3,970.0	feet <sup>2</sup>	\$ 4.75	\$ 18,860
139	Plumbing	3,970.0	feet <sup>2</sup>	\$ 11.50	\$ 45,660
140	Trench drain system	20.0	feet	\$ 225.00	\$ 4,500
141	HVAC, unit heaters	3,970.0	feet <sup>2</sup>	\$ 3.50	\$ 13,900
142	Exhaust system	3,970.0	feet <sup>2</sup>	\$ 1.90	\$ 7,550
143	Electrical	3,970.0	feet <sup>2</sup>	\$ 9.80	\$ 38,910
144	Tele/data	3,970.0	feet <sup>2</sup>	\$ 1.10	\$ 4,370
145	Waste handling and process equipment - <i>none included, assumed by MCSWA</i>				
146					
147	<b>ADD ALTERNATE: HOUSEHOLD HAZARDOUS WASTE ADDITION</b>			<b>DIRECT COST</b>	<b>\$ 522,730</b>
148					
149	<b>INDIRECT and SOFT COSTS</b>				
150	Indirect costs	54.81%	on	\$ 522,730	\$ 286,510
151	Soft costs	13.06%	on	\$ 930,760	\$ 121,520
152	Escalation - <i>none included; all pricing is per 12/2015</i>				
153					
154	<b>INDIRECT and SOFT COSTS</b>			<b>TOTAL</b>	<b>\$ 408,030</b>
155					
156	<b>ADD ALTERNATE: HOUSEHOLD HAZARDOUS WASTE ADDITION</b>			<b>TOTAL</b>	<b>\$ 930,760</b>
157	<i>BUILDING COST PER SQUARE FOOT</i>			\$ 234.45	
158					
159	<b>OPTION 2: MATERIALS RECOVERY FACILITY (ELECTRONICS WASTE &amp; HHW)</b>			<b>TOTAL</b>	<b>\$ 2,960,180</b>
160					

**Montgomery County**  
**Preliminary Permanent Drop-off Facility Assumptions**  
**Prepared by: Gannett Fleming, Inc.**

**DRAFT**

The following assumptions were developed by Gannett Fleming and used as the basis for developing capital cost estimates for permanent drop-off facility located in Montgomery County to accept household hazardous wastes (HHW), electronics, and other recyclable materials. The draft assumptions and corresponding cost estimate are preliminary and conceptual, and do not represent a feasibility analysis. The differences between the two sets of assumptions provided are as follows: Option 1 does not include permanent HHW features as part of the building infrastructure and Option 2 includes HHW infrastructure as part of the facility design.

**Option 1:** The facility is a permanent public drop-off facility accepting HHW, electronics, designated Act 101 recyclable materials, and designated non-Act 101 materials like scrap metal. Option 1 does not include building infrastructure to receive and process household hazardous wastes (HHW) on a permanent basis, but will have operating capacity and additional paved area to host HHW collection events and/or other recycling events. The design and operating concept includes the capacity and flexibility to recover multiple material types to position the County to leverage commodity markets to generate revenues, minimize expenses, and improve grant eligibility through Act 101 of 1988. Additionally, by recovering various material types the facility provides greater economic, social, and environmental value per dollar spent. Materials will be accepted during normal operating expected to be Monday through Friday 8 hours per day and 4 hours on Saturdays. Key features of the facility include multiple traffic lanes beneath a large overhang to handle peak vehicle flows (minimize cueing distance) and loading docks to accommodate the recovery of a wide variety of materials. The large overhang protects workers and customers during unloading and processing from precipitation and provides shade.

**Option 1 Facility Siting & Land Development Assumptions**

- New land procurement.
  - Industrial undeveloped parcels listed below as of December 2015 for cost averaging which yields an average cost per acre of about \$125,000.
- Total land area required: 2.5 acres minimum
- Standard Site development: Clearing, grubbing, grading, E&S, etc.

- Consideration during site selection and construction should be given to wind break since laborers will operate outside under the overhang during winter.

### **Option 1 Facility Feature Assumptions**

The materials drop-off facility integrates several building types, functions, and features and integrates sustainable design. The building is pre-engineered wood construction with metal or aluminum shell that is consistent with the Penn Township drop-off facility design. Key building features include:

- Warehouse (tip floor for electronics processing, cardboard baling, and space for storing incoming materials and supplies).
  - 2 load docks connected to tip floor for direct load into docked trailers.
    - 1 for skidded electronics.
    - 1 for baled cardboard or supplies (e.g. gaylords, skids, etc.).
- Office Space (2 offices and reception desk).
  - 1- Recycling Coordinator.
  - 1- Operations Manager.
- Integrated break room, education/conference room, bathroom, and kitchen.
  - Sized for 25 person capacity.
- Drive-through overhang.

### **Option 1 Exterior and Operational Feature Assumptions**

Design features and facility configuration must promote the safe and efficient receiving and unloading of large and fluctuating volumes of vehicles delivering different types of recyclable materials. Daily car traffic may exceed 500 vehicles over 8 operating hours and recycling events may process over 1,500 vehicles. Operational features and considerations:

- 4 lanes for traffic that pass under an overhang. Loop flow traffic pattern to enter, unload, and exit.
- Adequate cueing distance to park, unload, process customers.
- 6' safety lane buffer from the edge of building to the first traffic lane.
- 10 loading docks detached from building.
  - 45" dock height.
  - 10' wide concrete for the trailer feet.
- Fencing, gates, cameras, alarms, and lock systems.

- Posted warnings and instructional signage.
- Parking spaces for staff and visitors separated from material delivery traffic flow.
  - 25 spaces.
- Additional paved area to accommodate collection events.

### **Option 1 Equipment Assumptions**

- Scale to weigh incoming and outgoing materials
  - Baler. Vertical Horizontal Baler to consolidate cardboard.
  - Electric Cart Lift: To safely handle heavy electronics.
  - Forklift.
- 

**Option 2:** Is the same operating and preliminary design concept as Option 1, but Option 2 includes 4,200 square feet of building infrastructure to receive and process household hazardous wastes (HHW).

### **Option 2: Facility Siting & Land Development Assumptions**

Same as Option 1

### **Option 2: Facility Feature Assumptions**

The HHW portion of the facility is sized and designed based on the Lancaster County Solid Waste Authority's permanent HHW and electronics facility.

### **Option 2 Exterior and Operational Feature Assumptions**

Same as Option 1

### **Option 2: HHW-specific Structural Features and Systems**

- Facility floor constructed of steel-reinforced concrete with sealed joints, and sloped (where applicable) at least 1% for containment and drainage.
- Concrete lift barriers and drains keep incompatible materials separated and spills contained.

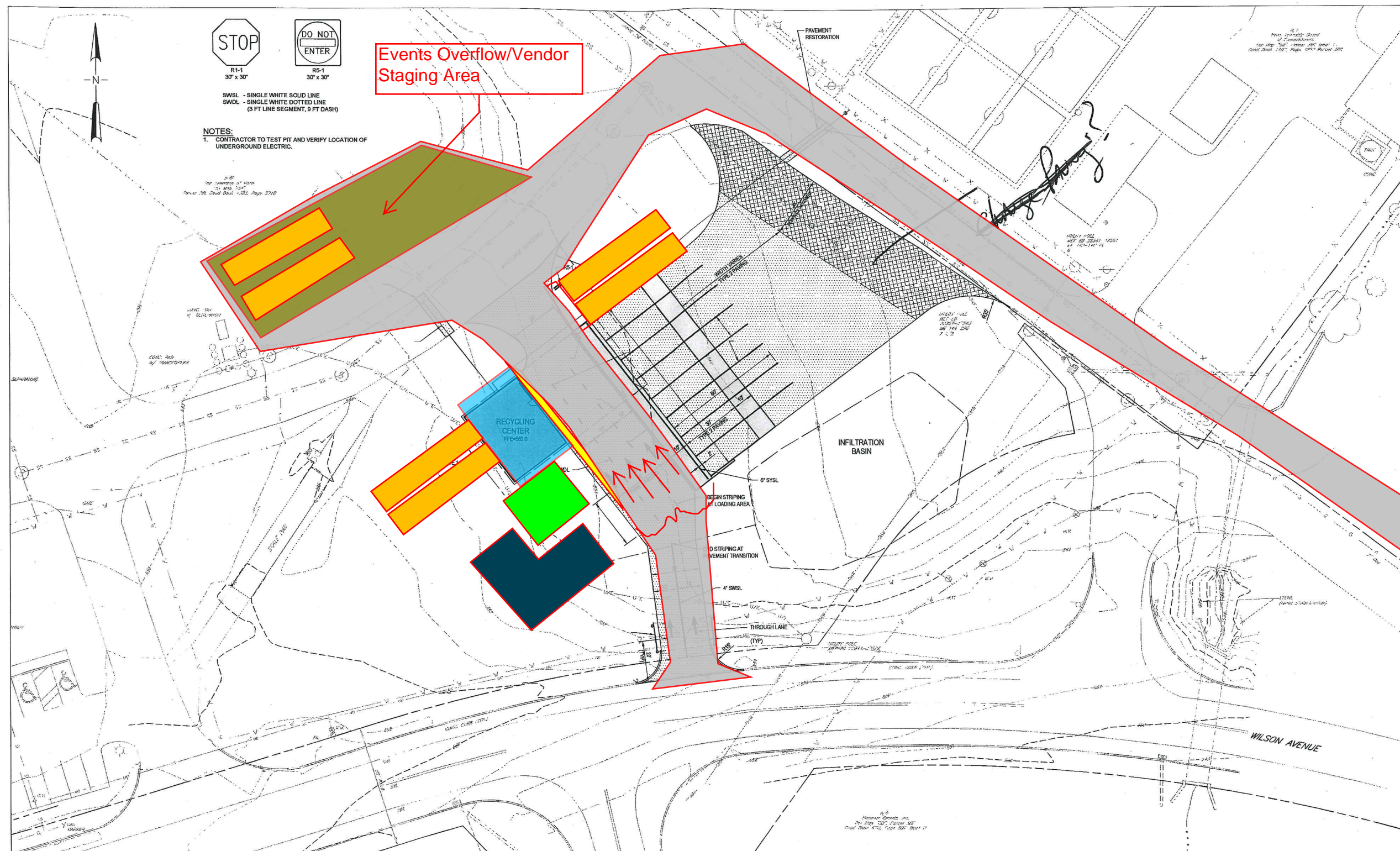
- Advanced sprinkler and fire suppression systems
  - Drains and containment areas and barrier design must consider sprinkler system management.
- Firewalls, fire roofing, fire doors.
- Secure, covered hazardous waste storage areas
- Natural and mechanical ventilation.
- Incompatible waste separation (dikes, berms, firewalls, other).
- Waste handling areas include locking drain or sumps for spill containment.
- Emergency care and response systems (primarily for HHW).
  - Shower.
  - Eye wash stations.
  - Fire suppression.
  - Emergency personal protection equipment (PPE) storage.
  - Spill response equipment storage.
- HHW material preparation areas:
  - Paint bulking room, special handling for batteries, mercury containing devices, etc.).
  - Special and separate containment areas for incompatible HHW materials and separation by DOT hazard class for transport.

### **Option 1 Equipment Assumptions**

Same as Option 1 with these additional equipment and supply considerations:

- Fire suppression systems.
- Air handling systems.
- Pumping systems to transport hazardous liquid wastes like antifreeze and oil from small tanks to larger tanks, and into tanker trucks.
- Can crusher(s) for paint bulking.
- Hazardous materials personal protective equipment.

# Montgomery County\_Option 1 Conceptual Layout Permanent Drop-off Facility



<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">0</td> <td style="width: 50%;">BID DOCUMENTS</td> </tr> <tr> <td>No</td> <td>Revisions</td> </tr> <tr> <td colspan="2">Notes: * Indicates signatures on original issue of drawing or last revision of drawing</td> </tr> <tr> <td>Drawn</td> <td>Job Manager</td> </tr> <tr> <td>Project Director</td> <td>Date</td> </tr> <tr> <td>RLT</td> <td>3/7/14</td> </tr> </table>	0	BID DOCUMENTS	No	Revisions	Notes: * Indicates signatures on original issue of drawing or last revision of drawing		Drawn	Job Manager	Project Director	Date	RLT	3/7/14			<p style="font-size: small;">1240 North Mountain Road Harrisburg PA 17112 USA T 1 717 541 0822 F 1 717 441 0161 harrisburg@ghd.com W www.ghd.com</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Drawn</td> <td>RLT</td> <td>Designer</td> <td>JCH</td> </tr> <tr> <td>Drafting Check</td> <td>-</td> <td>Design Check</td> <td>-</td> </tr> <tr> <td>Approved</td> <td>JJK</td> <td>(Project Director)</td> <td></td> </tr> <tr> <td>Date</td> <td colspan="3">MARCH 7, 2014</td> </tr> <tr> <td>Scale</td> <td colspan="3">1" = 20'</td> </tr> </table>	Drawn	RLT	Designer	JCH	Drafting Check	-	Design Check	-	Approved	JJK	(Project Director)		Date	MARCH 7, 2014			Scale	1" = 20'			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Client</td> <td colspan="3">PENN TOWNSHIP</td> </tr> <tr> <td>Project</td> <td colspan="3">RECYCLING COLLECTION FACILITY</td> </tr> <tr> <td>Title</td> <td colspan="3">SITE PLAN</td> </tr> <tr> <td>Contract No.</td> <td colspan="3">Original Size</td> </tr> <tr> <td>Arch D</td> <td>Drawing No:</td> <td colspan="2">86-16109-C001</td> </tr> <tr> <td>Sheet</td> <td>5</td> <td>of</td> <td>19</td> </tr> <tr> <td>Rev:</td> <td colspan="3">0</td> </tr> </table>	Client	PENN TOWNSHIP			Project	RECYCLING COLLECTION FACILITY			Title	SITE PLAN			Contract No.	Original Size			Arch D	Drawing No:	86-16109-C001		Sheet	5	of	19	Rev:	0		
0	BID DOCUMENTS																																																																
No	Revisions																																																																
Notes: * Indicates signatures on original issue of drawing or last revision of drawing																																																																	
Drawn	Job Manager																																																																
Project Director	Date																																																																
RLT	3/7/14																																																																
Drawn	RLT	Designer	JCH																																																														
Drafting Check	-	Design Check	-																																																														
Approved	JJK	(Project Director)																																																															
Date	MARCH 7, 2014																																																																
Scale	1" = 20'																																																																
Client	PENN TOWNSHIP																																																																
Project	RECYCLING COLLECTION FACILITY																																																																
Title	SITE PLAN																																																																
Contract No.	Original Size																																																																
Arch D	Drawing No:	86-16109-C001																																																															
Sheet	5	of	19																																																														
Rev:	0																																																																

- Warehouse/tip floor
- Parking
- Office space/conference Room
- Trailers
- Safety Lane/Buffer (6' wide)

Gannett Fleming Revision,  
December 2015

## HHW and Electronics Waste Collection Programs Data

Program	Cost	Pounds	Cost/ Pound	Participants	Cost/ Participant
<b>Smaller Drop-Off Event Programs (County)</b>					
Elk	\$ 22,955	4,889	\$ 4.70	54	\$ 425.09
Bedford	7,115	4,963	1.43	82	86.77
Cambria	12,845	8,845	1.45	134	95.86
Somerset	12,845	8,845	1.45	134	95.86
Huntingdon	9,846	10,146	0.97	178	55.31
Blair	21,830	34,300	0.64	275	79.38
Butler	75,244	47,160	1.60	360	209.01
Washington	32,616	42,937	0.76	405	80.53
Westmoreland	23,482	35,700	0.66	412	57.00
Beaver	32,553	34,903	0.93	429	75.88
York HHW	41,000	35,113	1.17	440	93.18
Dauphin	65,500	33,848	1.94	524	125.00
Centre	90,541	48,426	1.87	830	109.09
<b>Larger Drop-Off Event Programs (County)</b>					
1 Erie HHW & e-waste	\$ 105,750	140,000	\$ 0.76	1,000	\$ 105.75
Allegheny	134,912	163,929	0.82	1,797	75.08
Northampton	67,000	127,000	0.53	2,000	33.50
Berks	115,344	176,640	0.65	2,809	41.06
Bucks	116,715	188,883	0.62	3,472	33.62
Chester	91,067	153,783	0.59	3,799	23.97
Philadelphia	169,714	328,313	0.52	3,963	42.82
Delaware	84,619	163,725	0.52	5,308	15.94
2 Montgomery HHW	287,816	512,026	0.56	5,798	49.64
3 York e-waste	50,000	2,350,000	0.02	7,200	6.94
<b>Permanent Year Round Facilities</b>					
4 Lancaster Co. HHW & e-waste	\$ 386,159	3,229,131	\$ 0.12	72,075	\$ 5.36
5 Penn Township York Co. e-waste	80,000	671,400	0.12	57,110	1.40

Note: Except where otherwise noted, all data is from presentation by Kevin Kaasmann delivered to PROP July 25, 201

- 1 Data for 2015, provided by County. 12 monthly events at a permanent site. Private vendor. Approximately 2/3 of total waste (93,300 pounds) is e-waste at 33 cents/pound fee. Remainder is HHW at variable pricing.
- 2 Data from County Event Detail Reports for the six HHW events in 2014.
- 3 York County e-waste program consists of regular events (26/year) at permanent location. Vendor is OEM participant; therefore there is no disposal charge.
- 4 Data provided by LCSWMA. Data is for 2014. Costs are before grants and materials revenue. Over 3/4 of material weight (2.498 million pounds) was e-waste; 731,000 pounds was HHW. Average cost per pound for disposal is just under 4 cents for e-waste and approximately 19 cents for HHW.
- 5 Penn Township e-waste and recyclables permanent drop-off facility. Labor costs only. Other operating costs largely covered by vendor. 1.5 FTE and approximately \$80,000 fully loaded labor cost. Labor also serves household materials recycling, so costs for e-waste share would be lower. Not included: revenues of \$4,300 electronics and \$32,900 on other recyclables (paper and metals).