

# LATENT HARM FROM *IMPROPERLY* DISPOSED E-WASTE

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May 2023



# WHAT IS E-WASTE?

E-waste—or electronic waste—is a term used to describe electronic products (basically anything with a cable, cord, or battery) that have become unwanted, non-working or obsolete, or have reached the end of their useful life.

- computers and computer components (keyboard, mouse)
- printers
- monitors
- cell/smart phones
- tablets
- routers/modems
- *microwave ovens*
- *televisions*
- *radios*
- washers/dryers
- electronic toys

# **WHAT HAPPENS WHEN ELECTRONICS ARE NOT PROPERLY RECYCLED?**

**Improperly disposed e-waste:**

- will often take thousands of years to properly decompose.**
- will have a long-lasting negative effect on the environment.**
- negatively impacts soil, air, groundwater, and marine ecosystems.**
- leads to ongoing health risks.**



## **IMPACT ON THE SOIL**

- As electronic devices break down, they release toxic chemicals into the soil which eventually contaminate trees and plants.
- Some of these toxic chemicals include lead from circuit boards and lithium from batteries.
- All of these toxic chemicals have the potential to make their way into our food through the soil.

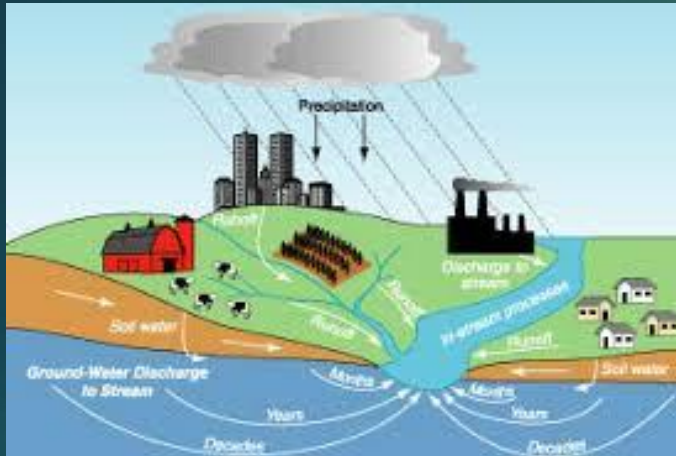
# IMPACT ON AIR



- Most of the e-waste not recycled properly will get sent off to incinerators in areas that do not have sanctions regarding electronic waste disposal.

- Burning e-waste is extremely harmful to the environment; their glass, metals, and plastic produce dangerous carcinogens when they are incinerated.

- As we continue to remove e-waste in this way, we will contribute to global warming by increasing the rate of ozone depletion.



# IMPACT ON GROUNDWATER

- When lead, mercury, and cadmium slowly break down, they eventually flow into the groundwater.

- Groundwater flows into streams, lakes, and ponds—and eventually makes its way into local water.





# IMPACT ON MARINE ECOSYSTEMS

- Electronic waste also goes into the ocean and this nonbiodegradable marine dumping can be deadly to organisms in the area and harm ecosystems.
- E-waste and the various toxins will continue to damage ecosystems and the process of recovery will become less feasible in the future.



## IMPACT ON HEALTH

- WHO warns: soaring e-waste affects the health of millions of children.

. smaller size, less developed organs make children more vulnerable.

. children in some countries are engaged to sort e-waste because of their small hands.

. many children live, go to school, and play near e-waste dumping grounds.

. millions of women are exposed to toxic e-waste which puts them and their unborn children at risk.



# SOBERING FACTS



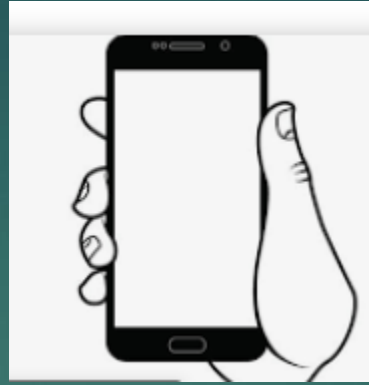
EPA estimates that in the US, only 15-20% of e-waste is properly recycled.

- The remaining 80% of e-waste accounts for 70% of toxic waste (DeVroom, 2020)
- In other words, e-waste is one of the highest-concentration contributors to *toxic waste*!

And we can do better:

- Currently, Europe properly recycles 42% of e-waste.

# Mobile Phones



There are more mobile phones in the world than people.

- In the US, more than 151 million phones are thrown away in a single year
- For every million mobile phones that are recycled, we can recover 35,274 pounds of copper, 772 pounds of silver, 75 pounds of gold, and 33 pounds of palladium, according to EPA

# Computers



It takes 500 pounds of fossil fuel, 50 pounds of chemicals, and 1.5 tons of water to manufacture one computer and monitor. according to the American Association for the Advancement of Science.

It's estimated that recycling one million laptops—rather than manufacturing new ones—saves the energy equivalent of electricity used by more than 3,500 US homes per year (us Geological Survey, 2016)

# RECYCLE E-WASTE RESPONSIBLY

- Before buying a replacement, consider repairing it. Use your electronics as long as possible in order to reduce the amount of e-waste that you create.
- When it's time to recycle: look for Electronics Recyclers with the R2 or e-Stewards label on their websites. They are EPA-certified to meet the cleanest and most responsible standards for e-waste.



- Remove any batteries from your electronics, they may need to be recycled separately. Lithium-ion batteries and devices containing these batteries should NOT go in household garbage or recycling bins.

# WHERE TO RECYCLE COMPUTER-RELATED ELECTRONICS

- Some convenient places that accept computer-related electronics for recycling are WVC's Computer Club Technology Center—*Cathy Thorn will specify what kinds*. Best Buy, Staples, and Goodwill are also possibilities to consider.
- The EPA website also has a list of places that accept different types of e-waste for recycling.  
<https://www.epa.gov/recycle/electronics-donation-and-recycling>

# LANCASTER COUNTY'S HOUSEHOLD HAZARDOUS WASTE PROGRAM

- Lancaster County Solid Waste Management Authority;  
Household Hazardous Waste Facility, 1299 Harrisburg Pike,  
<https://www.twp.lancaster.pa.us/household-hazardous-wastes>  
(717) 397-9968 [Note: *residents* only; no business/manufacturer]
- There is no charge for recycling the following E-waste products:  
photo cameras, video cameras, cell phones and smart phones, cell  
phone peripherals (chargers, batteries, Bluetooth earpiece, air cards,  
clips cases), DVD and VCR players, MP3 players and iPods, PDAs,  
portable electronic game players, video game consoles, stereos and  
stereo peripherals (CD players, turntables, amplifiers, and speakers).  
No wooden speakers. *Limit of 10 total e-waste items per customer, per  
day.*



# In Summary . . .

## Carelessly discarded Electronic Waste

- Has long-lasting negative effects on environment
- Leads to on-going health problems
- Creates a need to mine and process raw materials to manufacture new products

**Mindful choices: repair, upgrade, or recycle**



*Thank You for recycling responsibly.*

# E-Waste and The Computer Club Technology Center



# What is the Computer Club Technology Center (CCTC)



The CCTC provides technology services for Members of the Computer Club including but not limited to:

1. Hardware installation and problems
2. Firmware installation and problems
3. Software installation and problems
4. Instruction/troubleshooting on software, security, Internet, etc.
5. Provide parts and computers when possible
6. Refurbish (Rebuild) Apple and PC computers

Location is North J Building, 5<sup>th</sup> floor, before the first turntable





The CCTC accepts certain  
electronic devices and  
parts for recycle from Club  
Members

Recycling includes but is not  
limited to refurbishing older  
computers and upgrading  
them where possible to be  
reused –

**saving them from a landfill**

For  
Residents  
For Charity

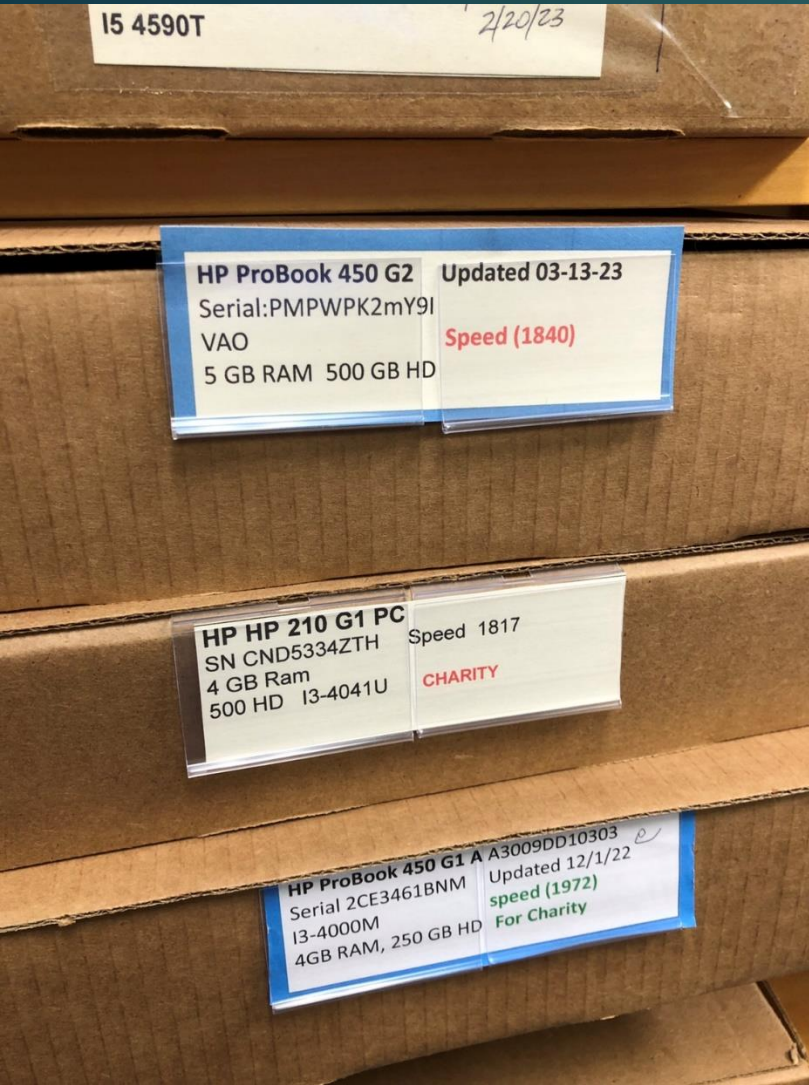


In order to do this, we have 2 imaging machines

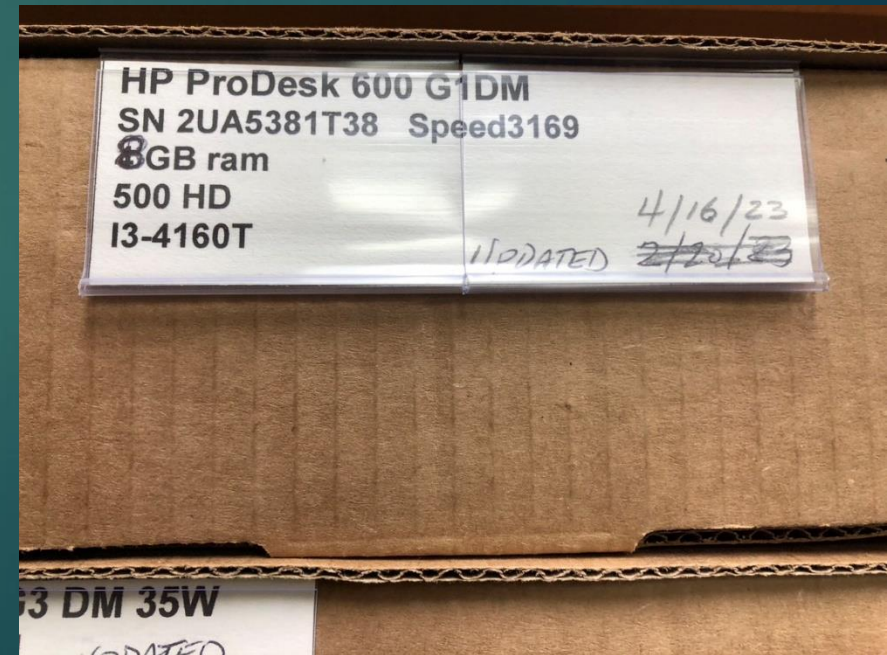
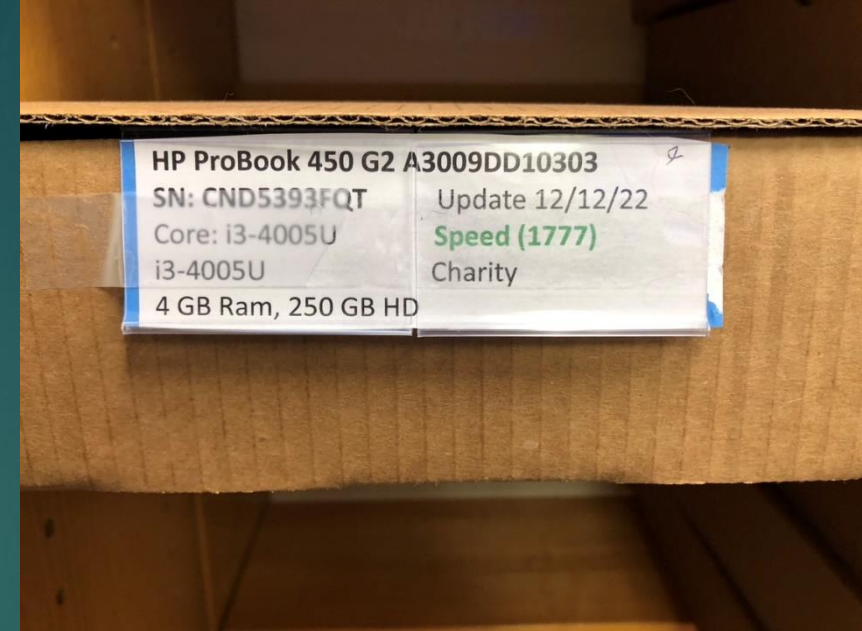
These machines totally wipe the hard drive of any PC of all information and install a new operating system. This is done for security.

Also installed are Computer Club standard software such as Malwarebytes, Ccleaner, Team Viewer, Libre Office, and others.





These refurbished devices are then separated according to their performance to be given to Residents or to Charity



We use PassMark to determine the

Who Can Receive Refurbished  
Computers, Other Devices, or parts in  
Inventory free of charge

Any Resident who joins the  
Willow Valley Computer Club by  
paying a one-time Membership  
fee of \$20





# Charitie

S



## Tenfold

**TLC, a service of Tenfold, is a 52-room shelter that provides temporary housing and supportive services for individuals, couples, families, and veterans**



## Solanco Neighborhood Ministries

Meals for the weekend, holiday meals, Birthday Bags Community Garden, Food Bank Homelessness Assistance, Clothing Assistance, Gas cards, Samaritan Assistance Program, etc.

# Charitie



A quality that includes the essential human virtues: Compassion and Humanity

We provide refurbished Apple Computers loaded with Deepin, a Linux operating system

Provides technology to students and entrepreneurs in Africa focusing on women and girls empowerment. These tools allow recipients to achieve their dreams of success and self sufficiency.

At least 50% of the students in the 11+ centers must be women. Centers are in West Africa, East Africa, and South Africa

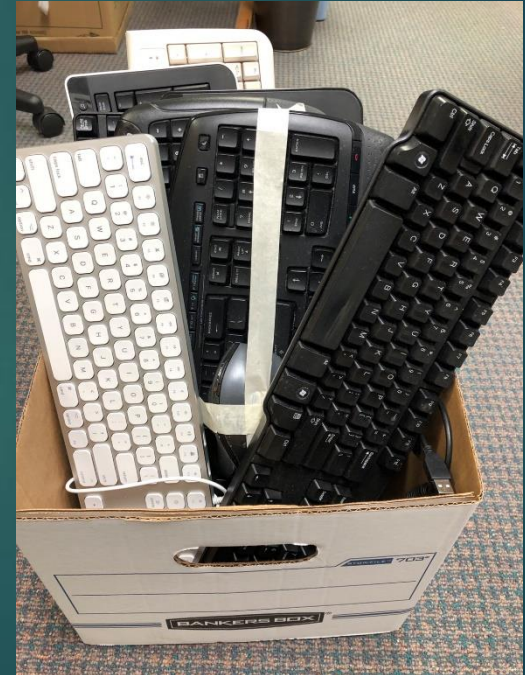
When possible the CCTC saves usable parts – Disc drives, Memory chips, routers, modems cables, connectors, adaptors,



Inventory Control is tricky  
- What to keep, what to recycle, what is too old,  
etc



Once we determine what to recycle besides computers, we then have to decide where to take the recyclable items







In the Heart of  
Lancaster at  
702 Prince Street,  
Fruitville Pike, Buck  
(Quarryville address)  
and north Lancaster





## Full Circle Accepts the following:

Copper  
Steel  
Aluminum  
Copper Wire -  
**WITHOUT THE  
CONNECTORS**  
Brass

## Other Materials

Electric Motors  
Sealed Units  
(Compressors)  
Ballast  
Computer Towers  
Lead  
Insulated Aluminum  
Wire  
Turnings (of any kind)





# Another Good Place to Recycle

## What can be recycled in store

### Tech

Adapters & cables  
Battery backup devices  
Cable/satellite receivers  
Calculators  
CD/DVD/Blu-ray discs & players  
Coffee brewers (less than 40 lb.)  
Computers  
Computer speakers  
Connected home devices  
Digital and video cameras  
Digital projectors  
Fax machines  
Flash drives  
Gaming consoles and controllers  
GPS devices  
Hard drives  
Headphones and earbuds  
Keyboards & mice  
Label makers

### Tech (cont.)

Laminators  
Laptops  
MP3 players  
Monitors (CRT, LED / LCD, plasma)  
Phones  
Printers & multifunction devices  
Routers & modems  
Scanners  
Shredders  
Small servers  
Stereo receivers  
Stylus pens  
Tablets & eReaders  
Video streaming devices  
Webcams

### Printer cartridges

Ink cartridges  
Toner cartridges

### Batteries

Single-use alkaline <sup>NEW</sup>  
Non-rechargeable lithium <sup>NEW</sup>  
Rechargeable Nickel cadmium (Ni-Cd)  
Lithium ion (Li-Ion)  
Small sealed lead acid (SSLA/Pb)  
Nickel metal hydride (Ni-MH)  
Nickel zinc (Ni-ZN)

### Writing tools

Pens and markers <sup>NEW</sup>  
Mechanical pencils <sup>NEW</sup>

### Even more

Phone cases <sup>NEW</sup>  
Tablet cases <sup>NEW</sup>  
Shredding (cost per pound)  
SodaStream® CO2 cylinders



# Lancaster County Solid Waste Management Authority







## ELECTRONIC WASTE

### COVERED DEVICES:

Pennsylvania's Covered Device Recycling Act prohibits residents from disposing of covered devices as trash. Haulers are banned from collecting these materials. Covered devices must be recycled at an approved facility.

Covered devices include only the following items:

- ✓ Desktop computers
- ✓ Laptops
- ✓ Monitors
- ✓ Computer peripherals, including a keyboard, mouse, printer and speakers
- ✓ Televisions
- ✓ Tablets and e-readers

Covered devices will be accepted from Lancaster County residents for FREE at the Household Hazardous Waste (HHW) Facility, with the following restrictions:

- ✓ Limit of 10 total covered devices per customer, per day (ex: 10 televisions, 10 computers and peripherals or any combination up to 10 total covered devices)

All electronics must be intact and will not be accepted otherwise!

### OTHER ELECTRONIC WASTE (E-WASTE):

We also accept the following e-waste materials from Lancaster County residents for FREE at the HHW Facility, with a limit of 10 e-waste items per customer, per day:

- ✓ Cameras: photo and video
- ✓ Cellphones, smartphones and peripherals: chargers, batteries, Bluetooth earpieces, air cards, clips, cases
- ✓ DVD and VCR players
- ✓ MP3 players and iPods
- ✓ PDAs
- ✓ Portable electronic game players and video game consoles
- ✓ Stereos and peripherals: CD players, turntables, amplifiers, speakers (no wooden materials)

LCSWMA reserves the right to inspect, delay or deny deliveries of covered devices and e-waste materials for any reason, at the discretion of our staff.

For a list of additional facilities that accept covered devices and other e-waste materials, visit [earth911.com](http://earth911.com) or contact your local municipal office.

**We DO NOT accept electronic waste from businesses.**

Visit [www.lcswma.org](http://www.lcswma.org) for facility operating hours and more information on recycling e-waste. No appointment is necessary.



We do our best to recycle any devices, parts, cables, etc. we can to save these from a landfill. The Computer Club is dedicated to being as good citizens as possible with regard to the environment.



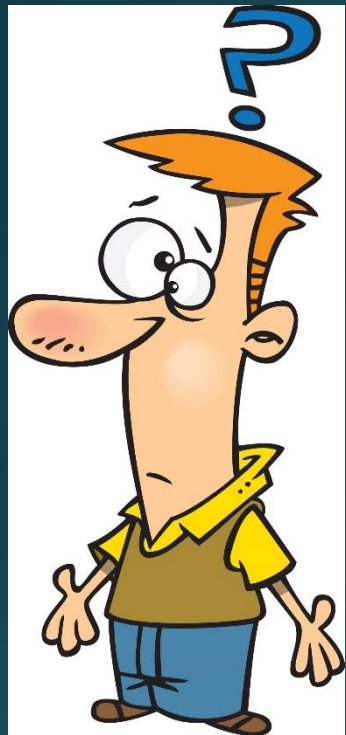


# One Last Note...



## HP Small Form Factor (SFF) Desktop Computer

– Replaces Large Old Desktops with smaller much more powerful Devices



Questions???



