

Recycling Electronics Responsibly in the Federal Community

**Options for Responsible Management of
Used Federal Electronics**

February 7, 2013



Overview

- Federal requirements
- Property disposition requirements
- Finding and selecting a recycler
- Preparing equipment
- Overview of media sanitization
- Recording and reporting
- Resources
- Q&A

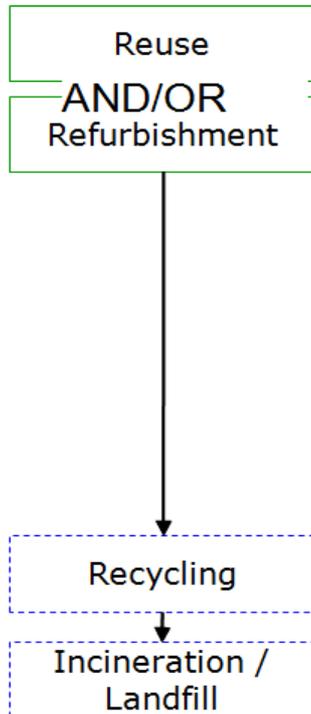


Federal Electronics Recycling Requirements

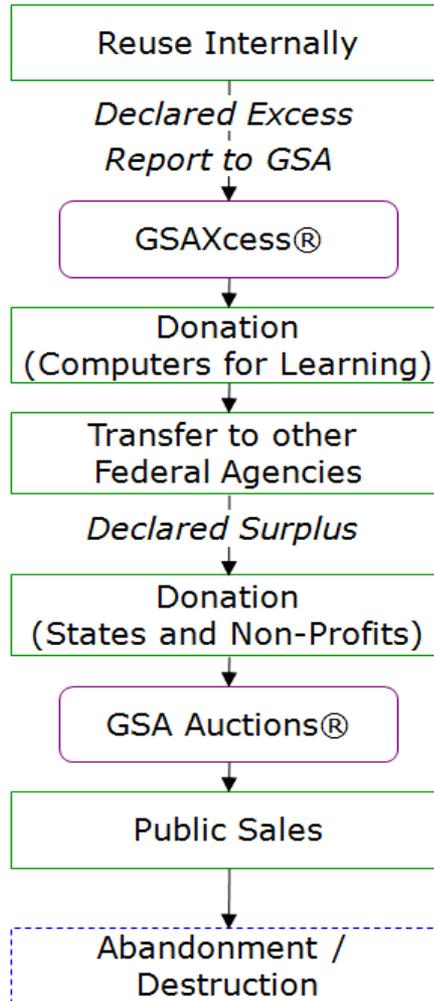
- Executive Order 13514
 - Federal agencies must ensure they are “employing environmentally sound practices with respect to the agency’s disposition of all agency excess or surplus electronic products”
- GSA FMR Bulletin
 - Guidance provided to “protect human health and the environment from the potentially harmful effects associated with the unsafe disposal of Federal Electronic Assets (FEA).”
- Federal Management Regulation (FMR) Subchapter B - Personal Property, 41 Code of Federal Regulations (CFR) 102



Environmental Hierarchy



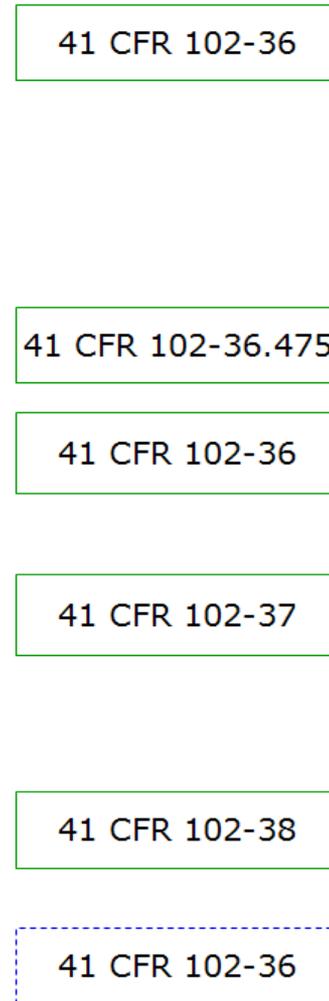
GSA Hierarchy



Time Frame



Regulation





Property Disposition Requirements

- Must adhere to Federal Management Regulations for property disposal
 - Property must go through the [GSA disposition process](#)
 - Obsolete or broken property with no value may be labeled for abandonment and destruction without going through the complete GSA process
- Property should be reused and donated to the maximum extent practicable
 - <http://www.gsa.gov/portal/content/101823>
 - <http://computersforlearning.gov/>
- After following the proper GSA procedures, you can select a recycler



Guidance and Regulation from GSA

- [FMR Bulletin B-34](#) issued February 29, 2012
- FMR Regulation 102-36 drafted and GSA has obtained comments
 - Regulation to be published soon
- Major points in the Bulletin and new Regulation are new policies and new reporting requirements



FMR Bulletin B-34

- Introduces the term “Federal Electronic Asset” (FEA); defines covered categories
- Encourages adherence to current federal requirements for reuse
 - Reuse within Federal government
 - Donations to state and local entities
- Allows for sale of functional FEA
- Prohibits bulk sales of non-functional FEA



FMR Bulletin B-34 (continued)

- Requires use of certified recyclers/refurbishers
- Prohibits landfilling and incineration
- Encourages recipients of used federal FEA to dispose of FEA in a responsible manner
- Changes the reporting requirements, deadlines, and dissemination of data



GSA Message to Recipients of Federal Electronic Equipment

fact sheet for donation recipients



Attention Recipients of Electronic Equipment Donated by the Federal Government

Updated: 7/2/2012

Congratulations! Your organization has just received electronic equipment that previously belonged to the Federal Government. The Federal Government asks that once the electronic equipment you have received becomes obsolete, you pursue an environmentally friendly disposal method – recycling!

The Federal Government has determined that improper disposal of used electronics may have potentially harmful effects on human health and the environment. The electronic products included with this factsheet must be disposed of at their end of useful life in accordance with all Federal, state, and local laws.

The Federal Government strongly encourages recycling these products through certified recyclers, even when such recycling is not required by Federal, state or local laws. Information regarding certified recyclers is available at: <http://www.epa.gov/epawaste/conservematerials/ecycling/certification.htm>.

Did You Know...?

In 2009, used and unwanted computer products, TVs and cell phones amounted to approximately 2.37 million short tons. Of that, only 25% were recycled.

You can help by recycling your old and broken electronics!

Finding an Electronics Recycler

There are a number of simple ways to find an electronics recycler:

- Check the lists of electronics recyclers and refurbishers certified under the Responsible Recycling (R2) Practices for Use in Accredited Certification Programs for Electronics Recyclers, **or** the e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment@:
 - R2: <http://www.r2solutions.org/certified/electronic-recyclers-with-r2-certified-facilities/>
 - e-Stewards: <http://e-stewards.org/find-a-recycler/recycler-listing/>
- The U.S. Environmental Protection Agency's eCycling website includes links to donation, recycling and manufacturer take-back websites: <http://www.epa.gov/epawaste/conservematerials/ecycling/donate.htm>. Look for donation and take-back programs that use certified recyclers.
- You may also contact your local or state environmental or solid waste agency for assistance. They may have local collection programs or databases of vendors who recycle obsolete electronics. Again, be sure to look for certified electronic recyclers.

Electronics Recycling Costs

Recycling costs will depend on the quantity of equipment you have, what type(s) of equipment you have for recycling, as well as where the equipment is going. Note that certified recyclers may be more likely to charge recycling fees than non-certified recyclers, in order to cover the cost of responsibly handling certain types of electronic equipment. However, some certified recyclers may provide free recycling and only request that you pay for transportation. Look at a number of certified recyclers to find one that will work for your organization.

Need More Information?

For more information on electronics reuse and recycling, visit the U.S. Environmental Protection Agency's eCycling website: <http://www.epa.gov/ecycling/>.

For more information on the Federal Government's electronics management, visit the Federal Electronics Challenge website: <http://www.epa.gov/fec/>.



Finding a Certified Recycler

- Two recognized certification programs
 - [Responsible Recycling \(R2\)](#)
 - [e-Stewards](#)
- Ensure the specific location you are using is certified



Finding a Manufacturer Take-Back Program

- Check with your vendor
 - Contact your sales representative
 - Check a manufacturer's website
- Confirm that the manufacturer is following environmentally responsible practices and utilizing certified recyclers
 - Take-back of EPEAT registered equipment
- Remember requirements for exchange sales!



Exchange Sales

- **§102-39.5—What is the exchange/sale authority?** (from Federal Management Regulation (FMR) Subchapter B - Personal Property, 41 Code of Federal Regulations (CFR), Part 102, Section 39)
- The exchange/sale authority is a statutory provision, (40 U.S.C. 503), which states in part:
 - “In acquiring personal property, *an executive agency may exchange or sell similar items and may apply the exchange allowance or proceeds of sale in whole or in part payment for the property acquired.*”



Evaluating an Electronics Recycler

- If possible, use an R2 or eStewards certified recycler.
- If you cannot use a certified recycler or appropriate take-back program, *you must perform due diligence!*
- [Perform an on-site review](#) (17-page sample FEC document)
or rely on an on-site review completed by another federal entity
 - Obtain a copy of the review for your records



Note for Defense Facilities

- The [Defense Logistics Agency \(DLA\)](#) manages all electronic equipment end-of-life activities for the Department of Defense (DoD)
- DoD-owned electronic equipment, when excess to an organization's needs, must be reported as excess to DLA
 - <http://www.dispositionsservices.dla.mil/>



Note About United States Postal Service (USPS) Recycling Program

- USPS recycling take-back program that allows U.S. federal agencies and their employees to recycle qualified electronics free of charge
- USPS is still finalizing coordination with specific federal agencies
- FEC will make appropriate announcements when the program is available to agencies and employees



Preparing to Recycle

- Collect all peripherals and cables
- [Complete media sanitization](#) of internal and external media
- Remove external media (disks, CDs, DVDs, USB drives, paper)
- Remove property decals
- [Properly package equipment](#) to reduce breakage
- Complete necessary property disposal documentation
 - Include [fact sheet for donation recipients](#)



Media Sanitization and Electronics Stewardship

- Media store data
- Sanitization prevents unauthorized disclosure of information and ensures confidentiality
 - allows for reuse
 - secures for recycling
- Media sanitization practices may impact electronics stewardship activities, particularly reuse and recycling
- Select the least destructive media sanitization method, which still meets security and confidentiality needs



Sources of Media

Media:	Where you might find it:
Paper or microforms	<ul style="list-style-type: none">• Imaging equipment, including printers, copiers, scanners, facsimile machines and multifunction devices (MFDs)• Microfiche readers and microfilming machines
Hard drives	<ul style="list-style-type: none">• Computer desktops and laptops• Some imaging equipment
Memory	<ul style="list-style-type: none">• Most electronics
Removable electronic media (Floppies, CDs, DVDs, USB removable media, Zip disks, removable memory cards)	<ul style="list-style-type: none">• As separate components• Within many electronics
Magnetic cassettes, cards, tapes and ribbon	<ul style="list-style-type: none">• Audio and visual (AV) equipment• Tape recorders and players



Methods of Media Sanitization

- Disposal: discarding media with no further sanitization actions
- Clearing: removing data from media so that the data can not be retrieved through a robust keyboard attack
 - example: overwriting
- Purging: removing data from media so that the data can not be retrieved through a laboratory attack
 - example: degaussing
- Destroying: rendering the media unable to be reused as originally intended; residual medium may need to be able to withstand a laboratory attack
 - example: shredding



What is “degaussing?” (Wikipedia description)

- **Degaussing magnetic data storage media**
- Data is stored in the [magnetic media](#), such as [hard drives](#), [floppy disks](#), and [magnetic tape](#), by making very small areas called [magnetic domains](#) change their magnetic alignment to be in the direction of an applied magnetic field. This phenomenon occurs in much the same way a compass needle points in the direction of the Earth's magnetic field.
- Degaussing, commonly called erasure, leaves the domains in random patterns with no preference to orientation, thereby rendering previous data unrecoverable. There are some domains whose magnetic alignment is not randomized after degaussing. The information these domains represent is commonly called magnetic [remanence](#) or [remanent magnetization](#). Proper degaussing will ensure there is insufficient magnetic remanence to reconstruct the data.^[2]



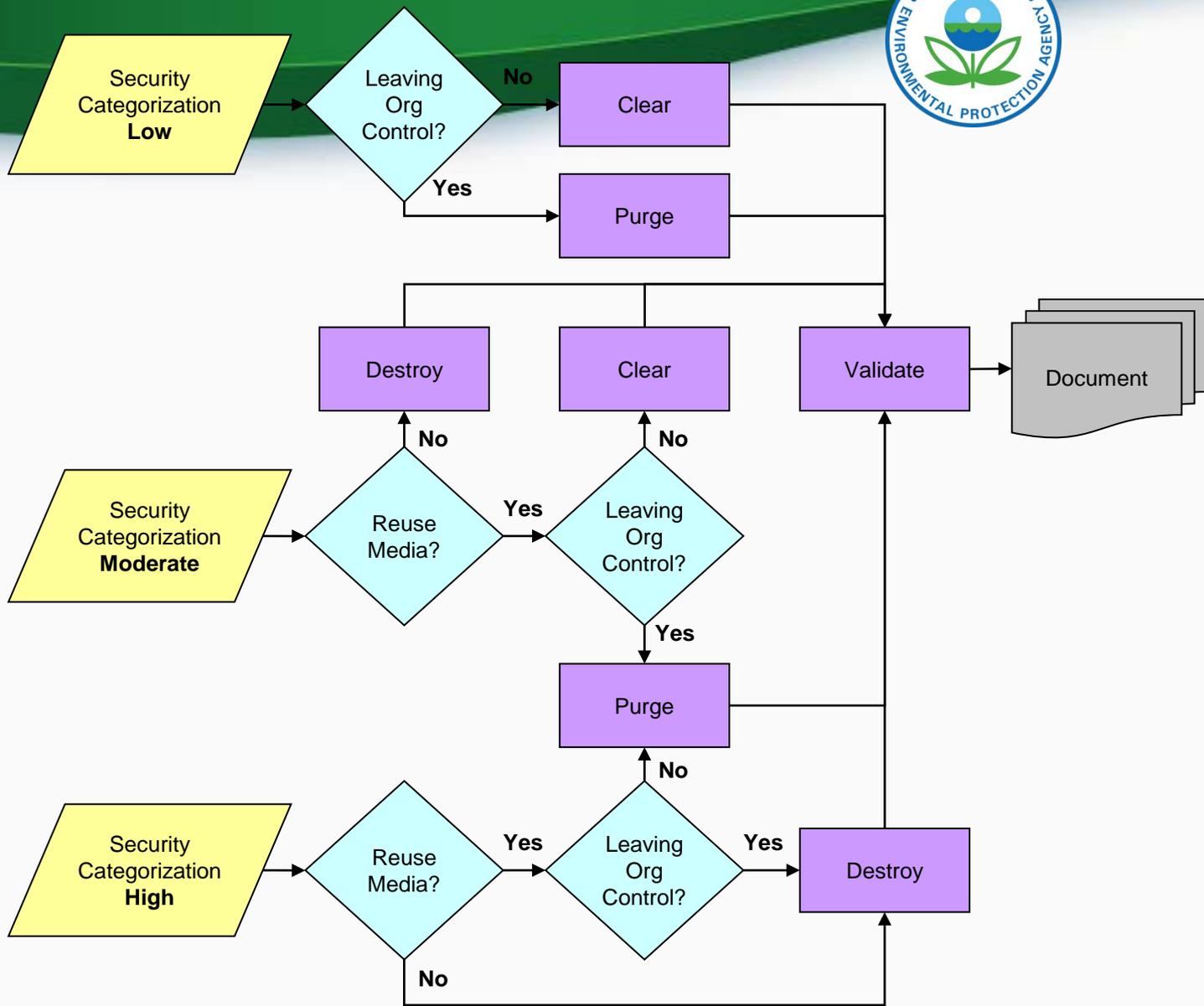
Degaussing (continued)

- **Irreversible damage to some media types**
- Many forms of generic magnetic storage media can be reused after degaussing, including audio [reel-to-reel](#) tape, [VHS](#) videocassettes, and [floppy disks](#). These older media types are simply a raw medium which are overwritten with fresh new patterns, created by fixed-alignment read/write heads.
- For certain forms of computer data storage, however, such as modern [hard drives](#) and some [tape backup](#) drives, degaussing renders the magnetic media completely unusable and damages the storage system.
- **BOTTOM LINE: CONSULT WITH YOUR IT PEOPLE ALONG WITH YOUR PROPERTY MANAGERS BEFORE AGREEING TO ANY SPECIFIC MEDIA SANITIZATION METHODS, EITHER IN WRITTEN CONTRACT CLAUSES OR VERBAL AGREEMENTS .**



Considerations for Media Sanitization

- Type of media (i.e., optical, magnetic, or paper/film)
- Size and amount of media
- Confidentiality and necessary security of the data on the media
- Cost of sanitization tools and staff, and available budget
- Availability of sanitization tools and staff
- Training and certification of staff
- Length of time available for sanitization





Options for Sanitized Media

- Recycling facilities may be able to recover plastics and metals from destroyed media
 - Media that is sanitized through abrasive scraping, shredding, disintegrating or pulverizing may be able to be recycled
 - Media sanitized through chemical destruction may not be able to be recycled and may require special handling for disposal
- If media must be incinerated, look for a facility that practices energy recovery



Recording and Reporting Recycling Activities

- Keep a record of either the number of units, or the weight of equipment, sent for reuse or recycling
 - Reuse generally recorded by unit
 - Recycling generally recorded by weight
- For FEC reporting
 - Required: Desktops, laptops, LCD and CRT monitors, Imaging equipment, TVs
 - Optional: Mobile devices, servers



Recording and Reporting

- *Reused*: includes anything reused internally, donated through Computers for Learning, reused in the federal government, or donated to States or non-profits
- *Recycled*: includes anything sent to an electronics recycler or returned to an electronics vendor or manufacturer, even if it may be refurbished and reused
- *Landfilled/Incinerated*: includes anything sent to a landfill or waste-to-energy facility
- *Unknown (including sales)*: includes anything sold at auction, sold through other government sales, or otherwise has an unknown final disposition

Please fill out the following form. You can save data typed into this form. Highlight Existing Fields

SECTION 4: END-OF-LIFE MANAGEMENT

1. How did your organization manage electronic equipment taken out of service?

PLEASE NOTE: Equipment may be reported in units of specific products and/or by weight of mixed loads. Please do not report the same equipment in both units and as part of a mixed load.

	Number of units reused	Number of units recycled	Number of units landfilled/ incinerated	Number of units with unknown disposition (including sales)
Desktop computers				
Cathode ray tube (CRT) monitors				
Liquid crystal display (LCD) monitors				
Laptop/notebook computers				
Printers*				
Multifunction devices (MFDs)*				
Televisions*				
Servers*				
Cellular/mobile telephones*				
Personal digital assistants (PDAs)*				
	Weight of load reused	Weight of load recycled	Weight of load landfilled/ incinerated	Weight of load with unknown disposition (including sales)
Mixed electronic products				



Resources

- GSA Personal Property Disposal Guide
- Code of Federal Regulations
- www.GSAXcess.gov
- www.GSAauctions.gov
- [FEC End-Of-Life Management Resources](#)



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