

Illinois Electronics Recycling Collection Sites: Collection Best Practices



Prepared by: Advisory Electronics Recycling Task Force
Last Updated: November 2022

Illinois Electronics Recycling Collection Sites: Collection Best Practices

Last Updated: November 2022

This document specifies best practices for collection sites that accept used electronics from residential sources meeting the definition of covered electronic devices (CEDs) under Illinois's Consumer Electronics Recycling Act (CERA; 415 ILCS 151/). The collection best practices are required to be submitted by the Advisory Electronics Recycling Task Force (Task Force) for posting on the Illinois Environmental Protection Agency (IEPA) website by November 1 annually for collections occurring in the next program year, as specified in Section 1-85 of CERA.

Proper handling of CEDs at collection sites and events protects site workers and the public and can save money by avoiding costly or hazardous mistakes. It can also ensure that collected materials are preserved for proper recycling.

To the extent that collection sites and events collect other electronic items that are not defined as CEDs, the best practices contained herein may remain applicable. It is not, however, a requirement of collection sites registered under CERA to accept materials other than those defined as CEDs. As used within this document, "electronics" carries the meaning of CEDs as defined in CERA, and the terms "CEDs" and "electronics" may be used interchangeably except as otherwise clarified.

The best practices contained herein were developed by members of the Task Force with input from collectors and recyclers and outlined based on a framework document prepared by the Electronics Recycling Coordination Clearinghouse. The best practices provided in this document are highly recommended, but not required, unless otherwise stated in CERA or set forth by local authorities. Suggested additions or changes for future program years should be directed to IEPA's staff liaison to the Task Force.

1. Compliance Best Practices

Collectors should:

- a) Comply with all applicable local, state, and federal requirements, including but not limited to environmental, health, and safety requirements.
- b) Register all collection sites in accordance with the requirements of CERA by the timeframes established in the Act. Collection sites may include public or private properties. In the event that the collection site is not owned by the collector, an agreement between the collector and property owner should be in place which stipulates the responsibilities of each party, with consideration given to the practices outlined in this document.
- c) Be willing to disclose fines received and notices of violation to upstream/downstream partners, such as recyclers, manufacturers, or others if any collection site receives a fine or notice of violation that is not corrected within 30 days.

2. Disposal Best Practices

Collectors should:

- a) Not dispose of whole CEDs through land filling or incineration.

3. Collection Site and Event Planning and Coordination

In advance of collection, collectors should:

- a) Review the site location and collection setup with all staff and the recycler to confirm adequate traffic flow, collection, packaging, and loading space is available.
- b) Prepare signage to facilitate traffic flow and communicate acceptable materials and onsite practices to be followed by residents.
- c) Review past collection event data and coordinate with the recycler to develop an estimate of incoming CED weight. This is important for determining the amount of packaging materials and transportation to be required, in addition to the need for staff to assist in traffic control and collection operations.
- d) Consider use of an advance appointment system for incoming materials, whereby residents will sign up for a timeslot within the collection period and may identify the types and quantities of CEDs to be delivered. This facilitates traffic flow and planning for the amount of material expected to be collected, helping to maximize trailer loads and achieve collection and transportation efficiencies.
- e) Promote collection events through all methods reasonably available to the collector, which may include but not be limited to digital and print newsletters, press releases, social media, website, radio and television ads, signs, etc.

4. Onsite Collection and Packaging Best Practices

Collectors should:

- a) Staff the site during operating hours. NO unattended or unsecured drop-off of electronics. This protects against theft and provides supervision to prevent mishandling and breakage of electronics. Electronics contain valuable materials and sensitive data. It is a good idea to secure your site by locking buildings and gates and monitoring with video cameras to protect from theft, vandalism, and illegal dumping.
- b) Provide signage identifying that only residential CEDs are accepted for recycling, preferably also listing the items defined as CEDs and stating there is a limit of 7 residential CEDs per individual that can be accepted at the collection event.
- c) Provide enclosed storage areas or containers so that the collected electronics are protected from the weather. The ideal place to store collected electronics is indoors. Do not store electronics in an unsecured area or outside overnight.
- d) Handle and store electronics in such a way as to minimize breakage.
 - i. Clean up spilled and broken electronics immediately; manage according to established solid and hazardous waste management laws and regulations.
 - ii. Store broken CRTs in a building with a roof, floors, and walls, and in a container that is constructed and designed to keep dust contained.
 - iii. Have a safety procedure to manage a mercury spill from a broken LCD screen.
- e) Adhere to good housekeeping standards, including keeping all unloading, handling, and storage areas clean and orderly, in addition to any standards specified by the receiving recycler.
- f) Ensure storage containers are structurally sound and suitable for the contents.

- g) Sort electronics to the following categories as specified in Section 1-45(e) of CERA: CRT-containing computer monitors and televisions; flat-panel computer monitors and televisions; all other covered televisions (e.g., wood console televisions); computers; all other residential CEDs; and any electronic device that is not a CED that the collector has arranged to have picked up with residential CEDs and for which a financial arrangement has been made to cover the recycling costs outside of the manufacturer program.
- h) Label containers (gaylords or pallets) to clearly identify the type of material enclosed. Materials with specific labeling requirements include the following:
 - i. Containers of broken Cathode Ray Tube (CRT) glass should be labeled: “waste cathode ray tubes – contains leaded glass” or “used cathode ray tubes – contains leaded glass; do not mix with other glass materials,” unless other labeling is required by state or federal law.
 - i) Not disassemble, dismantle, shred, transform, or demanufacture any CEDs before sending them to a recycler, unless there is a specific agreement with the recycler to do so. This includes clipping cords, removing toner cartridges, removing batteries, etc.
 - j) Confirm with the recycler what handling methods are to be employed to manage items that are collected already broken or dismantled.
 - k) Train employees on proper handling and emergency procedures, including proper lifting techniques for heavier devices.
 - l) Prepare to ship all items collected in their original form and without missing components (including power cords, etc.) unless removed by consumer prior to receipt or as per recycler agreement and allowed by state law.
- m) Ensure safe stacking and packaging practices:
 - i. Stack and prepare electronics on pallets and in gaylords according to transporter and recycler specifications, unless other suitable packing materials/containers are specified, including separation by device type if requested or required. When using a pallet, each unit should be placed so that it is stable, and each layer secured with shrink wrap so that the entire pallet will remain intact and secure during transport. Stacked height should be no higher than 5’ to 7’; Collectors should not engage in loose stacking of materials.
 - ii. All gaylords must be placed on pallets to ensure they can be safely loaded.
 - iii. Recyclers will often provide you with packaging and may assist you in loading materials onto a truck.
- n) Product specific guidelines include:
 - i. Computers and Laptops:
 - Pallet only: Place computer towers and laptops on pallets, and shrink-wrap stack as it is built to a height from 5 to 7 feet. Protect laptops with separate cardboard boxes and put them with the computers. For laptops that may be intended for reuse or refurbishment, stand vertically to minimize screen damage in stacking and transport, or per recycler specifications. Apply enough layers of shrink wrap to ensure

the stacked units will not topple over and will remain secure when transported.

- Gaylords: Place units carefully into the box, stacking as efficiently as possible. Reinforce with shrink-wrap as needed.

ii. Monitors:

- Place units with screen facing down on pallets with cardboard between layers, to maximize the stability and density of stacked monitors. Position the largest units on the bottom and to the outside edges of the pallet, and interlock units as possible. Keep flat screen units upright, with the screen facing inward, to avoid breakage. Apply enough layers of shrink wrap to ensure the units will remain secure and not topple over when transported.
- If placing units into a gaylord, when lowering units into a gaylord, use extreme caution, including proper lifting techniques, to prevent worker injury and accidental breakage.
- For CRT monitors up to 17-inch screen size, place corner monitors and the center monitor facedown. Additional monitors can be placed face up and nestled amongst the monitors that are placed facedown. This allows for optimizing the space on the pallet for 17-inch monitors. This method will not work for larger monitors.

iii. Television sets:

- Palletize uniform sized TV's together, with screen facing down on pallets with cardboard between layers. Place flat screen units upright, with the screen facing inward, to avoid breakage. Very large console televisions should be placed on the lowest level of a stacked pallet with other units stacked on or around them as possible. Apply enough layers of shrink wrap to ensure the units will remain secure and not topple over when transported.

iv. Batteries¹:

- Battery terminals must be protected because batteries can hold a residual charge even when they appear dead. This can cause sparking and possible smoke, fires, or explosions when they come in contact with other batteries or metal. The best way to prevent this from happening is to bag the batteries by dropping one battery into its own individual clear plastic bag and sealing it, if possible. Gloves are recommended when doing this in high volume environments. When clear plastic bags are not available, you can tape each battery. For AA, AAA, C and D batteries, tape the positive terminal (+). For all other battery types, you can tape the charging terminals. The tape is best if it is clear, but you can use any of the following: packing tape, duct tape, non-conductive electrical tape. Do not cover the entire battery or the chemistry type on the battery label – only tape the terminals. For button batteries you can make a 'ravioli' by laying down a piece of clear

¹ Battery recycling information compliments of Call2Recycle (<https://www.call2recycle.org/safety-training/>)

packing tape with the sticky side up, placing the batteries on the tape with space between each one, and then covering with a second layer of clear tape.



- U.S. DOT has specific terminal protection requirements that must be adhered to when shipping the following batteries: Nickel, Cadmium, Nickel Metal Hydride, Nickel Zinc, Alkaline, Carbon Zinc – all over 9V.; and Lithium Ion, Small Sealed Lead Acid, Lithium, and Button Cell regardless of size or voltage. More information can be found here: <https://www.phmsa.dot.gov/training/hazmat/how-safely-send-batteries-and-battery-powered-devices-mail>
- Lithium-based rechargeable and primary batteries are hazardous and should be treated as such. Individuals will want to always bag or tape each lithium-based battery. Also, please watch for Lithium Ion or Lithium batteries that show signs of damage such as swelling, smoking, leaking, or overheating. Do NOT place damaged Lithium Ion or Lithium primary batteries in a collection box. Immediately put them in an absorbent, non-flammable material (sand or cat litter) in a cool, dry area. The U.S. DOT requires special packaging for defective, damaged, or recalled (DDR) lithium ion and lithium primary batteries. Go to <https://www.phmsa.dot.gov/lithiumbatteries> for more information.
- Cell phones should be bagged individually before shipment.
- DOT-approved battery storage boxes must be stored in a cool, dry place and maintained in a secured area under supervision. Write the date you began collecting the batteries on the outside of the box.
- To prepare a DOT-approved battery box for shipping, inspect and remove all non-battery items, except cell phones. Remove any paper, plastic, or metal, and do not add any padding (paper, wood, pellets, etc.). Seal the box, complete the shipping label, do not add warning labels, and do not cover the text on the back of the box. The U.S. DOT requires the text to be visible. Boxes should be shipped when they are full (up to 66 lbs.) or within one year of the first battery being collected.

v. Non-CED items:

- Accept only those non-CED items for which an agreement has been made with the recycler, or another entity, for subsequent removal and processing for reuse or recycling, including financial arrangements for the cost of servicing non-CED items.
- Segregate all non-CED items from CED items and package them separately in accordance with recycler guidelines.

5. Trailer Loading Best Practices

Collectors should, in cooperation with the transporter and any other specific local logistics needs:

- a) Load pallets of monitors and printers in the nose of the trailer. This tends to secure the pallets from shifting during transit, preventing a dangerous situation when they arrive at the recycling partner.
- b) Fill gaylords even with the top to maximize shipping weight and provide adequate stability in double-stacked loads.
- c) Wrap pallets tightly with sufficient shrink wrap to ensure the load will not shift during transit.
- d) Obtain a load weight of at least 18,000 pounds, effectively reducing transportation costs and the environmental footprint.

6. Materials and Safety Best Practices

Collectors should have the following materials present for all collections; such materials are to be provided by the recycler:

- a) Pallet: Flat wooden or plastic transport structure designed to be movable by forklift. Existing in varying standards but typically measuring 48" x 48".
- b) Gaylord Box: Reusable multi-walled corrugated cardboard boxes. Typically, 48" x 48" x 48"
- c) Drum: 55-gallon cylinders typically made of steel, plastic, or paperboard
- d) Shrink Wrap: Polymer plastic film, available in rolls for packaging purposes.
- e) Heavy Duty Packing Tape: Available in rolls for packaging purposes.

Collectors should implement the following safety practices:

- a) Use safe lifting procedures while handling materials.
- b) Always use Personal Protective Equipment (PPE), especially when working with electronics and pallets.
- c) Not stack CRT monitors with broken glass on a pallet, as it presents both environmental and health hazards. Instructions for correct packaging of broken monitors are in Section 3d of this document.

7. Data and Reporting Best Practices

Collectors should:

- a) Document the length of time collected electronics have been accumulated on-site. Collectors may store devices for up to one year for the purpose of accumulating

quantities necessary to facilitate adequate shipment size, unless otherwise required by federal, state, or local law.

- b) Maintain bills of lading and other documentation noting the number of gaylords, pallets, or other containers delivered to reporting entity or its designee, and the weight of each inbound and outbound shipment by destination.
- c) For items that are managed through reuse, document number of units or weight diverted for whole product reuse.
- d) Keep electronics from businesses or other states separate from electronics collected for the Illinois e-waste recycling program. Business weight does not count toward program weight, and non-CED device types are also not covered.
- e) Keep records for a minimum of three years. Keep records (bills of lading, other documentation) of the number of gaylords, pallets, or other containers delivered to recyclers and the weight of each shipment by destination. Record where and when you send materials for processing. Cross-check the information you collect with the information provided to you from your recycler.

8. Downstream Best Practices

Collectors should:

- a) Send all CEDs to the assigned or authorized recycler in accordance with the program plan and requirements of CERA without diverting any CEDs to other vendors, brokers, recyclers, or other entities.

9. Reuse Best Practices

Collectors diverting CEDs for reuse should:

- a) Have an agreement in place with their recycler stipulating the circumstances under which devices may be retained by the collector for reuse.
- b) Include in the agreement with the recycler the management practices that will be instituted in the event that the device is found to be unsuitable for reuse, including return to the recycler for proper recycling and a prohibition on scavenging of parts and components from non-reusable CEDs.
- c) Manage all devices diverted for reuse in compliance with applicable requirements of CERA and other local, state, and federal requirements, including requirements to protect personal information and sensitive data that may be contained on devices.

Appendix A

Definitions

Collector: A person who collects residential CEDs at any program collection site or one-day collection event and prepares them for transport. A collector may also be a transporter, refurbisher, or recycler with responsibility for the disassembly, demanufacture, or recycling of electronics; for purposes of this best practices document, only the collector aspects of such entities are addressed.

Covered Electronic Device (CED): Any computer, computer monitor, television, printer, electronic keyboard, facsimile machine, videocassette recorder, portable digital music player that has memory capability and is battery powered, digital video disc player, video game console, electronic mouse, scanner, digital converter box, cable receiver, satellite receiver, digital video disc recorder, or small-scale server sold at retail. Exclusions to the definition of CED are included in CERA.

Recycler: Any person who transports or subsequently recycles residential CEDs that have been collected and prepared for transport by a collector at any program collection site or one-day collection event.

Reuse: Any operation by which used electronics or components thereof are used for the same purpose for which they were conceived

Used electronics: Electronics that are discarded, donated, or given to a collector.