

Electronics Collection Requirements and Best Practices

Guidance for electronics collection sites and exempt transfer facilities
PUB-WA-2030 2023



Wisconsin law sets standards to make sure electronic waste is managed in a way that will protect human health and the environment.

This document summarizes requirements for electronics collectors and options for meeting them, along with best practices to consider. It also explains additional registration, reporting and recordkeeping requirements for collectors registered with the E-Cycle Wisconsin program.

Contact Department of Natural Resources staff at DNRWle-cycling@wisconsin.gov with any questions.

Terms used in this document

Collection site	Site where the public can drop off electronics for recycling.
Electronic device	Device that requires electric current or electromagnetic fields to function and contains a circuit board. Does not include a major appliance or motor vehicle.
Eligible electronic device	Device that counts toward manufacturer recycling targets under E-Cycle Wisconsin. Includes the following: <ul style="list-style-type: none">• cellphones, other telephones with a video display and phone accessories operated by a battery;• computers (desktop, laptop and netbook computers);• desktop printers (including those that scan, fax and/or copy and 3-D printers);• computer monitors;• other computer accessories (including keyboards, mice, speakers, scanners);• DVD players, VCRs and other video players (i.e., DVRs);• FAX machines• tablets and e-readers;• TVs;• video game consoles; and• video game system components and portable hand-held video game devices operated by a battery.
Exempt transfer facility	Site or facility where collected electronics are consolidated before sending to a recycler and is not open for the public to drop off electronics.
Facility	Any person, business or organization involved in collecting, storing, transporting, recycling or refurbishing electronics.

Packaging and sorting electronics

Requirement 1

Store electronics in a way that prevents damage from weather, theft or vandalism [ss. NR 502.07 (2) (am) and (2d) (a), Wis. Adm. Code]

In all cases, the DNR recommends using signs, security cameras or other security measures to deter theft, vandalism and after-hours drop-offs.

Option 1

Store electronics in a building or shed with a lock or restricted access.



Option 2

Store electronics in containers or trailers that can be closed and locked.



Option 3

Protect electronics stored outdoors from weather with a roof or tarp to prevent rainwater or melting snow from pooling in a container. If electronics are removed frequently, TVs may be left uncovered if precautions are taken during severe weather. Secure the site with fencing and gates that can be locked when no staff are present.



Requirement 2

Make sure containers or packaging are adequate to prevent breakage and spills, compatible with the contents and made of material that will remain structurally sound for as long as electronics are stored [ss. NR 502.07 (2) (am) and (2d) (a), Wis. Adm. Code]

Recommendations for meeting this requirement include:

- ✓ Use containers that staff or the public can place electronics into without breaking (e.g., don't allow TVs to be thrown over the side of a roll-off container)
- ✓ If electronics are stored outdoors, even temporarily or under a roof, use containers that will not break down if exposed to rain or snow.
- ✓ Use Gaylords or other containers placed on pallets for all but very large items. Stack electronics as efficiently as possible inside containers. Place small, flat-screen TVs and monitors upright with screens facing inward inside the container.
- ✓ Use shrink wrap to reinforce and cover containers when full.
- ✓ Store large TVs and monitors directly on pallets. Keep them upright with screens facing inward and shrink wrap them together to stabilize them for transport.
- ✓ Consolidate electronics, with similar items placed in the same container. Check with your recyclers to see if they offer better pricing for sorting items in a certain way.
- ✓ Make sure stacks on pallets are not more than 5-7 feet tall and items in containers do not extend over the top.

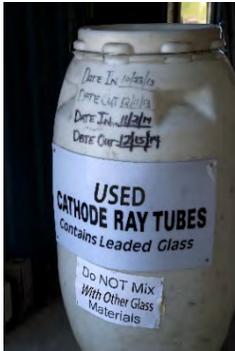
The DNR also recommends making sure site staff are trained on proper handling and storage of electronics, including how to clean up broken electronics.

Requirement 3

Clean up and properly package and label broken cathode ray tube glass [s. NR 661.0039, Wis. Adm. Code]

Cathode ray tubes, the vacuum tube video display found in most TVs and monitors made before the mid-2000s, contain leaded glass and are hazardous waste. Any CRT glass not sent to a recycler must be managed as hazardous waste. If a site has broken CRTs or CRT glass that will be recycled, it must manage the glass following the requirements at s. NR 661.0039, Wis. Adm. Code.

Option 1



Place broken CRTs or CRT glass in a leak-proof container constructed, filled and closed to minimize potential for releases (e.g., a trailer sealed by U.S. Department of Transportation standards, or a closed 55-gallon drum).

Containers must be labeled “Used cathode ray tubes – contains leaded glass” or “Leaded glass from televisions or computers.” AND “Do not mix with other glass materials.”

Option 2



Store broken CRTs or CRT glass in a building with roof, walls and floor.

NOTE: Broken CRTs or CRT glass must be packaged as described in Option 1 for shipping.

Moving electronics off-site

Requirement 1

Demonstrate containers, pallets or other packaging holding waste electronics, along with electronics stored outside of a container, are removed or emptied at least once per year
 [ss. NR 502.07 (2) (cm) and (2d) (b), Wis. Adm. Code]

Option 1



Label each container or pallet with the date the first device was placed in it.

Option 2



Maintain an inventory tracking system that demonstrates when loads of electronics were received and shipped off-site.

Requirement 2

Transport electronics to licensed, approved or exempt recycling facilities
 [s. NR 502.06 (4) (b), Wis. Adm. Code]

In Wisconsin, many electronics cannot be sent for disposal in a landfill or incinerator. Refer to s. 287.07 (5), Wis. Stats., for a full list.

Electronics recyclers/processing facilities located in Wisconsin must have a solid waste processing license from the DNR after June 30, 2024. The DNR recommends keeping copies of bills of lading or receipts showing where the electronics were shipped, including a DNR license number for the receiving facility, if applicable.

Electronics banned from disposal in Wisconsin



- Cellphones
- Computers (desktops, laptops, tablets)
- Computer accessories (mice, keyboards, etc.)
- Desktop printers (including those that scan, fax and/or copy and 3-D printers) and fax machines
- Monitors
- TVs
- TV/monitor accessories (cables, DVD players, receivers, remotes, speakers, VCRs, etc.)
- Video game consoles

Other site management requirements

Collection sites [s. NR 502.07 (2), Wis. Adm. Code] and exempt transfer facilities [s. NR 502.07 (2d), Wis. Adm. Code] must also meet the following requirements:

1. Limit public access to when an attendant is on duty for areas where mechanical equipment is part of your operation.
2. Clearly label the recycling area at the site.
3. Keep area clean and free of litter.
4. Don't burn electronics or other solid waste.
5. Provide means to control fires.
6. Control rodents, insects and other vermin.
7. Maintain all-weather access road/parking.

Safe management of potentially hazardous materials

In addition to CRTs, other electronics contain hazardous waste components, including batteries and lamps (light bulbs). Collection sites often also receive these as individual items. Site workers should be aware of safety hazards and management requirements for these components, especially if electronics break on-site or customers drop off dismantled electronics.

Sites must manage loose batteries and lamps as universal waste under ch. NR 673, Wis. Adm. Code, with proper labeling and storage, or they will be subject to full hazardous waste requirements, including a waste determination. Go to dnr.wi.gov and search “universal waste” for more information. Below is additional safety and handling information for batteries and lamps.

Batteries

Most types of batteries, other than alkaline, are considered hazardous waste. Batteries in electronics, especially lithium-ion batteries, pose a fire risk if they are damaged or defective. Follow the recommendations in the [Packaging and storage](#) section above to avoid damaging batteries in collected electronics. If a battery within an electronic device has been damaged or is visibly swollen, put the device in a fire-proof container with kitty litter, sand or other products designed for this purpose.



Comparison of normal and damaged lithium-ion batteries

As a best practice for loose batteries, prevent short-circuiting and potential fires by taping battery terminals with clear packing tape or placing each battery in a separate plastic bag (check with your recycler to find out if they have a preference). Store batteries in leak-proof plastic containers, like a five-gallon bucket. Use separate containers for each type of battery unless your recycler tells you otherwise.

To meet universal waste requirements, each container must be labeled with “Universal Waste-Batteries,” “Waste Batteries” or “Used Batteries” and the date the first battery was placed inside. The container must be sent off-site for recycling within one year of the date on the container.

The U.S. Department of Transportation has specific requirements for shipping lithium-ion batteries and electronics that contain lithium-ion batteries. For more information, visit <https://www.phmsa.dot.gov/lithiumbatteries>.

Lamps

Many flat-screen LCD (liquid crystal display) TVs and monitors use thin and fragile mercury-containing lamps to light the screens. Many sites also receive individual lamps, such as fluorescent tubes or compact fluorescent lamps.

To meet universal waste requirements, sites must keep individual lamps (that are not part of electronic devices or that have been removed) in a closed, non-metal, leak-proof container. The container must be labeled “Universal Waste-Lamps,” “Waste Lamps” or “Used Lamps” and the date the first lamp was placed inside. The container must be sent off-site for recycling within one year of the date on the container.



Example of lamps stored and labeled as universal waste.

If an LCD screen or fluorescent lamp (bulb) breaks, the DNR recommends cleaning it up immediately to reduce mercury exposure. If the break happens indoors, turn off central heating and cooling, open windows and doors, and have everyone leave the room. Wait 10 minutes before returning to the room. To clean, push broken glass onto stiff paper or cardboard using damp, disposable paper towels or wet wipes. Use sticky tape to remove small pieces and powder. Never vacuum or sweep broken lamps. Place broken lamps and cleanup debris in a leak-proof, non-metal container and send it for recycling with your next shipment of intact lamps.

Additional requirements for E-Cycle Wisconsin collectors

Collectors who choose to participate in E-Cycle Wisconsin must register with the DNR and submit an annual registration and report form by Feb. 1 each year. E-Cycle Wisconsin program years run from Jan. 1 to Dec. 31. Collectors must receive electronics from Wisconsin households or K-12 schools and send eligible electronics to a registered recycler.

Requirement 1

Provide collection program information and notify the DNR of changes

As part of registration, collectors must provide information about the materials they collect and the locations where electronics are collected from. Locations may include permanent drop-off sites, one-day collection events or other temporary collection sites.

Collectors must notify the DNR if any of this information changes during a program year to ensure the information published on the DNR website remains up-to-date [s. NR 530.08 (1) (c)]. Accurate information ensures the public knows about electronics recycling opportunities and collectors don't receive materials they don't want.

Requirement 2

Separate E-Cycle eligible and non-eligible material

Only electronics defined as eligible electronic devices that come from Wisconsin households or K-12 schools are eligible under E-Cycle Wisconsin. Collectors should separate eligible electronics from non-eligible electronics and clearly label containers, pallets or other packaging to indicate whether they contain eligible or non-eligible material. The DNR recommends working with your recycler to label containers in a way that works for them.

Requirement 3

Track shipments of electronics to registered recyclers or collectors

A registered collector must maintain records of the dates eligible electronic devices were sent to another registered collector or a registered recycler, along with a bill of lading, scale receipt, or approximate weight or size of the load [s. NR 530.08 (3) (a)]. The collector cannot rely solely on the records or reports received from the collector or recycler that received the electronics. Instead, they must maintain their own independent records. The records can include the bills of lading or scale receipt from the recycler, but these should be independently verified at the time the load is sent off-site.

Option 1



If there is a scale on-site, weigh the load before it leaves and keep the scale receipt, with the load destination and the date noted.

Option 2



Request a copy of the bill of lading from the driver transporting the load when it is picked up. Make sure it has the date, destination and approximate weight of the load, and the information is accurate.

Option 3

Use a paper tracking sheet, spreadsheet or other electronic tracking system to note the date each load was sent off-site, list the collector or recycler it was sent to, and estimate the weight of the load.

The DNR has templates for collectors to use or modify for this purpose. Contact DNRWle-cycling@wisconsin.gov for copies.

Things to keep in mind:

- ✓ If a staff member will not be on-site when a load is picked up, the DNR recommends the site operator complete an estimate as close to the pickup date as possible and note the date the load was actually picked up.
- ✓ Collectors do not need to individually track each device to meet this requirement but must be able to make a reasonable estimate of a load's total weight.
- ✓ Collectors with multiple collection sites listed on its registration are responsible for ensuring these shipment records are kept for each collection site. Depending on the relationship between the registered collector and the sites, the records may be kept in a central location or at each site. Contact the DNR with any questions about how to meet this requirement.
- ✓ Estimated weights may be different from weights reported by the receiving collector or recycler due to factors like tare weight and additional sorting of eligible and non-eligible devices. This is not cause for concern unless there are significant differences.

Requirement 4

Track total weights sent to registered collectors or recyclers and report them to the DNR

On the annual DNR report, registered collectors must list registered collectors or recyclers they sent eligible electronics to, and the total weight sent to each during the previous program year [s. NR 530.08 (2), Wis. Adm. Code]. The receiving collector(s) and recycler(s) should provide a report listing the total they received during the previous program year. Work with them to resolve any differences between records before submitting the report to the DNR.

Collectors must report whether electronics they collected were from urban or rural counties. State statute defines a list of “urban” and “rural” counties under E-Cycle Wisconsin. Refer to the DNR’s [map of urban and rural counties as designated under E-Cycle Wisconsin](#) to determine whether to report weight as urban or rural. If unsure which county electronics came from, report as urban.

Requirement 5

Maintain collection site records for a minimum of three years

Collectors must maintain records required under s. 287.17 (7), Wis. Stats., and s. NR 530.08, Wis. Adm. Code, for a minimum of three years.

DNR inspections of collection sites and exempt transfer facilities

DNR staff conduct inspections of registered electronics collectors and other solid waste facilities to make sure they are following requirements and operating in an environmentally sound manner.

How will I know that I’m being inspected?

Registered E-Cycle Wisconsin collection site inspections are typically scheduled in advance to allow time to gather all records the inspector will be looking for and ensure everyone can attend. It also provides an opportunity to review electronics collection site requirements and prepare any questions for the inspector. Occasionally, inspections may be unannounced, including inspections for non-registered electronics collection sites and transfer facilities.

What is the inspector looking for?

The inspector follows an inspection form to determine compliance with applicable statutes and administrative codes. Refer to Appendix A for a checklist that collectors may use to self-assess whether a site is meeting requirements.

What happens after an inspection?

The inspector will discuss any compliance concerns or best practice recommendations during the inspection and records review. The inspector may contact you after the inspection if there are additional questions or concerns. You will receive a letter or email summarizing the inspection and if corrections are needed, the letter will outline steps and follow-up actions needed to return to compliance. The inspector will send confirmation once proof of required actions has been received.

Compliance issues could result in stepped enforcement actions for collection sites and exempt transfer facilities. The DNR may also suspend registration with the E-Cycle Wisconsin program if there are significant compliance issues. However, a suspension would be rare if the site is cooperating and making the necessary improvements.

Wisconsin Department of Natural Resources Bureau of Waste and Materials Management
P.O. Box 7921, Madison, WI 53707-7921 | DNRWle-cycling@wisconsin.gov

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Appendix A: Site compliance checklist

The following checklist includes items a DNR inspector would likely review during a collection site or exempt transfer facility inspection. The last section includes requirements specific to E-Cycle Wisconsin collectors.

Site operations

- Electronics are stored in a manner to prevent damage from weather, theft or vandalism [s. NR 502.07 (2d) (a), Wis. Adm. Code].
- Materials are transported to licensed, approved or exempt facilities [s. NR 502.06 (4)(b), Wis. Adm. Code].
- Facility uses structurally sound containers or packaging adequate to prevent breakage and spills [s. NR 502.07 (2d) (a), Wis. Adm. Code].
- Broken cathode ray tubes (CRTs) are stored indoors or in a container or vehicle that is constructed, filled and closed to minimize releases to the environment [s. NR 661.0039 (1)(a), Wis. Adm. Code].
- Cathode ray tubes (CRTs) are properly labelled [s. NR 661.0039 (1)(b), Wis. Adm. Code].
- Facility does not conduct any processing of electronics without a solid waste processing license (or exemption) [s. NR 502.08 (1), Wis. Adm. Code].
- Facility is clean and free of litter [s. NR 502.07 (2d) (c), Wis. Adm. Code].
- Facility has effective means to control rodents, flies and other insects or vermin [s. NR 502.07 (2d) (e), Wis. Adm. Code].
- Facility maintains an all-weather access road and parking area [s. NR 502.07 (2d) (f), Wis. Adm. Code].
- Facility does not conduct open burning [s. NR 502.07 (2d) (d), Wis. Adm. Code].
- Site appears to be meeting performance standards, such as no adverse impacts on surface water, wetlands, groundwater, etc [s. NR 502.04 (1)(a), Wis. Adm. Code].
- Facility can demonstrate electronics are shipped off-site at least once per year [s. NR 502.07 (2d) (b), Wis. Adm. Code].

Safe management of other potentially hazardous materials (when applicable)

- Batteries are properly managed, labelled and stored.
- Mercury-containing equipment is properly managed, labelled and stored.
- Lamps are properly managed, labelled and stored.
- Used oil and/or anti-freeze are properly managed, labelled and stored.
- Refrigerant containing equipment is properly managed and the facility has DNR safe transport certification (if transporting materials).

E-Cycle Wisconsin collector recordkeeping and reporting

- List of accepted materials submitted with registration is accurate [s. NR 530.08 (1)(b)1, Wis. Adm. Code].
- Registered collection sites and events are up to date (addresses, dates and contact information) [s. NR 530.08 (1)(2) and (3), Wis. Adm. Code and s. 287.17 (7)(b), Wis. Stats.].
- List of recyclers that received electronics and amounts sent to each is up to date [s. NR 530.08(2)(a)(1), Wis. Adm. Code and s. 287.17 (7)(b), Wis. Stats.].
- Facility maintains records of amounts of electronics received and the sources [s. 287.17 (7)(b), Wis. Stats.].
- Collector receiving eligible electronics from other registered collectors/collection sites maintains records including the other collector's name and amounts of electronics received [s. NR 530.08(2)(a)(3), Wis. Adm. Code].
- Records are maintained for three years [ss. NR 530.08 (3)(b) and 502.06 (4)(g), Wis. Adm. Code].
- Facility maintains independent records of electronics sent to another registered collector or recycler, including dates and descriptions of the loads [s. NR 530.08 (3)(a), Wis. Adm. Code].
- List of fees for accepted items submitted with registration is accurate [s. NR 530.08 (1)(4), Wis. Adm. Code].