

Electronics Recycling

In a Nutshell

Unlike traditional recyclable items - plastic bottles, cardboard, and paper, for example - electronics require special consideration when recycled. Computers, cell phones, and televisions contain toxic heavy metals such as lead, cadmium, and mercury and should not be disposed of in a landfill. Recycling electronics reduces pollution, because new materials are not created, and allows for the reuse of undamaged parts of discarded items.

The “How To”

Donating your Used Electronics

According to the [Environmental Protection Agency](#), preventing waste in the first place is preferable to any waste management option, including recycling. Donating used electronics will extend the life of the device, can offer organizations and schools a chance to update their electronic stock when new devices are too pricey, and keeps garbage from landfills. Businesses may receive tax incentives for donating their used electronics to schools or non-profit organizations and households can gain satisfaction knowing they are providing other individuals with technological benefits and opportunities.

Recycling your Used Electronics

If your electronics cannot be donated, or if you would rather recycle them, municipalities and businesses are increasingly offering electronics recycling. In most cases, the resident simply needs to take their old computer, cell phone, or television, for example, to the recycling location and the organization recycling them will take them. It is necessary to note, however, that some places may charge a fee for the recycling of certain electronics; televisions typically have a small fee attached.

According to E-Cycle St. Louis, there are three major [benefits](#) to recycling your electronics:

1. Conserves natural resources - Recycling valuable material reduces the need to mine the earth for raw materials
2. Supports the community - Donating used equipment benefits schools, non-profits, and low-income families
3. Creates jobs locally - As demand for electronics recycling increases, recycling organizations will be forced to hire more workers



How to Set up Electronic Recycling Programs

If your municipality or organization wants to establish an electronics recycling program, the Environmental Protection Agency and other similar organizations that recycle electronics are your best resources. Considerations should be given not only to where you are going to hold the electronics, but also to what you do with them once you receive them. Without a proper and appropriate plan of action in place, your building might end up being a warehouse of old electronics.

Planning & Zoning

Municipal Legislation

There are very few ordinances and statutes directing the electronics recycling habits of local governments. Most of the legislation, as displayed below, relates to the manufacturer and the requirements placed on them by the states. Municipalities and organizations should refer to the state legislation and the US Environmental Protection Agency for further direction regarding local legislation for e-cycling.

State Legislation

In 2008, the Missouri Legislature passed Senate Bill 720. Titled, "[Manufacturer Responsibility and Consumer Convenience Equipment Collection and Recovery Act](#)," the bill states that any computer manufacturer must implement a recovery plan for the collection of or the recycling of used and obsolete equipment.

The Illinois Legislature passed a [law](#), also in 2008, that created a statewide system for recycling and/or reusing computers, monitors, televisions, and printers. The law requires electronic manufacturers and retailers to

participate in the management of these discarded electronics. The law also establishes a recycling benchmark system that requires manufacturers to recycle a certain amount of discarded electronics by a certain date. Also, as of January 2010, no manufacturer may sell any computer, monitor, television, or printer to residential customers without registering with the Illinois Environmental Protection Agency.

Registering your Business for Electronics Recycling

In Illinois, in order for a business to be a registered electronic waste collector, recycler, refurbisher, or any combination of the three, the business must register with the [Illinois Environmental Protection Agency](#) every year. Collection locations are listed [online](#) while refurbishers and recyclers are not asked to provide a publishable location.

In Missouri, it is not mandatory to register with [E-Cycle Missouri](#), a part of the Missouri Department of Natural Resources, in order for your business to accept discarded electronics and recycle them. In order to be included on the [Registered Electronics Recycling Business List](#), however, your business must register. Businesses who want to register with DNR must choose between four levels of increasingly stringent regulations attached to each level. For example, a Level Four business must adhere to more regulations than a Level One business. Listed below are a few traits from each level. To view all of the requirements, please click the link above.

Level One

- Acquire an EPA ID number, if business does not already have one
- Complete and turn in Host Site Registration and Host Site Self-Audit forms
- Business must make every effort to recycle as much of the discarded electronics as possible

Level Two

- Business must meet all Level One requirements
- Business must adopt Missouri e-cycle best management practices
- Business must develop and submit a Closure Plan

Level Three

- Business must meet all Level One and Level Two requirements
- Business must provide financial responsibility for a closing cost estimate based on maximum pounds of inventory previously reported

Level Four

- Business must meet all Level One, Level Two, and Level Three requirements
- Business must participate in a third-party organization certification

Dollars & Cents

Costs to Residents

Most recycle centers do not charge a fee for the majority of your used electronics. However, recycle centers tend to charge a small fee for accepting televisions and computer monitors due to the cost involved with removing the leaded glass and properly recycling it. This cost usually ranges from \$10-20 per item.

Costs to Recycle Centers

It is very difficult to find cost tabulations for organizations and municipalities that recycle electronics. Cities that recycle electronics often include the cost of administering the program with the overall cost of total recycling efforts. Businesses often do not make expenditures public information. The costs of administration and labor might be easier to predict depending on your situation.

Measuring Success

Electronic Recycling Program Success

According to the [Electronics Takeback Coalition](#), 423,000 tons of computers were disposed of in 2010. Of this 423,000, only 168,000 or 40 percent, was recycled. In that same year, 595,000 tons of monitors were disposed of and only 33 percent (194,000) were recycled.

In that same report, the Electronics Takeback Coalition quotes the EPA in saying that 1.9 million tons of electronic waste was generated in the year 2000. Of that 1.9 million tons, 190,000 tons, 10 percent, were recycled. In the year 2005, the total electronic waste generated had jumped to 2.63 million and the amount recycled had increased to 360,000, or 13.7 percent. In 2010, 3.32 million tons of electronic waste was generated and the amount recycled continued to climb to 19.6 percent, or 650,000 tons. In 2011, the total amount of electronic waste generated was 3.41 million tons. The amount recycled in 2011 was a reported 850,000 or almost 25 percent of the total amount discarded.

The numbers indicate that the amount of electronics being recycled is increasing. With the continuing trend of increasing technology, the amount of electronic waste generated is sure to rise and it is necessary that the percent of total electronic waste that gets recycled continues to grow, as well.

Recycling Potential

According to the [Environmental Protection Agency](#), recycling one million laptops saves the energy equivalent

to the electricity used by more than 3,500 homes in an entire year. Also, recycling on million cell phones can recover up to 33 pounds of palladium, 75 pounds of gold, 772 pounds of silver, and 35,000 pounds of copper.

Discover More

The Missouri Department of Natural Resources offers a [list](#) of businesses that are registered electronics recyclers within the state.

The Illinois Environmental Protection Agency offers a [list](#) of e-waste collection sites throughout the state.

The [City of St. Peters, Missouri](#) accepts certain types of electronics at the municipal recycle center, Recycle City.

The [St. Charles County Recycle Works](#) accepts a variety of electronics including computers, monitors, cell phones, televisions, and gaming systems.

On the second Saturday of each month beginning in February and ending in November, the [City of Ellisville](#), in partnership with Wits, Inc., offers an opportunity for residents to drop off their unwanted electronics and computers for reuse or recycling.

Case Studies

City of Clayton Electronics Collection Event

Description

Each year the City of Clayton sponsors a collection event for computers, TV's and other electronics. Approximately 150 tons of e-waste is kept out of landfills each year through this effort.

http://www.claytonmo.gov/Government/News/Electronic_Recycling_Event_s2_p1782.htm

e-cycle St. Louis

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Address

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Description

The purpose of this program was to serve as an on-line directory of registered electronics recyclers that complied with regional program guidelines for legitimate recovery of consumer electronics. This was initially set up through a regional solid waste management grant so the companies and organizations were located in Jefferson County, St. Charles County, St. Louis City and St. Louis County.

Cost

After completion of the grant, there are minimal on-going annual host site registration fees and staff time to respond to interested citizen and electronics recyclers' inquiries. The host site fees are paid by the regional solid waste management district so I do not know those costs. I would estimate staff time around 2-3 hours per month.

Lessons Learned

Placing website on a host server has been the biggest problem as the contractor is financially and professionally unreliable. So, the website remains out-of-date most of the time. The other regional partners have not maintained the host site registration process, however St. Louis County already licenses such facilities located in St. Louis County in accordance with our Waste Code. And the additional host site registration is not pursued because of the previously mentioned host site problem. The long-term intent when this St. Louis regional program was implemented was that this website would 'morph' into a statewide website managed by the Missouri Department of Natural Resources (MDNR). The MDNR has implemented their website (ecyclemo.org?) but so far that website does not completely address the St. Louis regional needs.

I receive numerous calls nearly every week that demonstrates the usefulness of this website. The name probably comes up readily on internet searches so that seems effective and helpful for residents/businesses as the interest in recycling grows.

Southampton Neighborhood Electronics Recycling Event

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Address

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Description

Partnering with [Midwest Recycling Center \(MRC\)](#), the [Southampton Neighborhood Association](#) hosted a neighborhood recycling event. This free event was marketed within the neighborhood but was open and free to other residents as well. The guidance from MRC was that "if it uses a power cord or batteries, we will be thrilled to recycle it".

Cost

With the exception of televisions, there were no costs to residents. Televisions were limited to one per vehicle. There was a nominal fee for additional televisions.

Lessons Learned

Better promotion with fliers in the neighborhood businesses (we just used social media and our newsletter) and some yard signs day of event would have been good. The location worked well with entrance and exits. Reaching out to the neighborhood churches allowed promotion via the church bulletins. Overall it was a good experience and the Southampton Neighborhood Association plans the event again next year.