

# Montana Recycling

Environmental Quality Council  
January 7-8, 2010

Using the draft work plan tasks for Senate Joint Resolution No. 28, approved by the Environmental Quality Council as a guideline, a discussion of electronic and household hazardous waste recycling is outlined below.

## **Overview**

Montana law currently addresses both electronic and hazardous waste recycling. The Integrated Waste Management Plan (IWMP) required by Title 75, chapter 10, part 8, MCA, recognizes these wastes under the umbrella of "special wastes". These wastes are identified separately from others in the plan because of their toxicity and the increased possibility of contamination from small amounts. For the purposes of the EQC's review of recycling, the information in this overview focuses on household hazardous wastes, electronic waste, batteries, and waste tires. It does not include a review of hazardous waste management facilities, which operate in accordance with Title 75, chapter 10, part 4, MCA, or asbestos-containing materials.

The 2006 IWMP, the most recent plan, identifies recommendations for increasing the recycling of household hazardous wastes, waste tires, batteries and electronic waste. The recommendations include:

- Establish additional opportunities for collecting household hazardous waste by increasing the number of drop-off sites that are open and increasing the frequency of collections.
- Coordinate collection events in multiple communities.
- Provide a source of funding for collection of hazardous wastes generated by households and conditionally exempt small quantity generators.
- Ban whole tires from landfills.
- Collect a fee on new tires that can be used to support tire recycling.
- Form partnerships and look for opportunities to recycle tires locally.
- Label batteries or place signs at locations where batteries are sold to direct consumers to recycling locations.
- Educate consumers on the importance of recycling electronics waste.
- Encourage the reuse of electronic equipment.
- Partner with retailers for buy back or recycling programs.
- Work with other states on national policies.
- Establish procurement guidelines to choose the best environmental options for electronic purchases in both the public and private sectors.<sup>1</sup>

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<sup>1</sup> "Integrated Waste Management Plan 2006", Department of Environmental Quality, September 2005, pages 11-12.

## **Hazardous Waste**

Federal law allows for the disposal of household hazardous waste in the trash, but many states and local governments establish collection programs for those wastes to reduce the amount going into area landfills. According to Montana law, household hazardous waste is defined as "products commonly used in the home that due to corrosivity, ignitability, reactivity, toxicity, or other chemical or physical properties are dangerous to human health or the environment". Wastes include cleaning, home maintenance, automobile, personal care, and yard maintenance products.

### **Household Hazardous Waste Figures** **(Provided by EPA)**

- Americans generate 1.6 million tons of household hazardous waste per year.
- The average home can accumulate as much as 100 pounds of household hazardous waste in the basement and garage and in storage closets.

The Department of Environmental Quality (DEQ) is required to be a clearinghouse for information on household hazardous waste disposal. In accordance with 75-10-215, MCA, the DEQ must administer a statewide household hazardous waste public education program. The program must provide alternatives to the disposal of hazardous waste at landfills, options for recycling, methods for reuse or recycling, and alternatives to the use of products that lead to the generation of household hazardous waste. In the IWMP, the state identifies economic issues related to the recycling of household hazardous waste, noting, "although the selection of non-hazardous waste may prove to be an expensive alternative to commonly available chemicals, the cost of disposal may offset the higher initial cost."

The DEQ provides information through a web site about hazardous waste recycling. Information about the recycling of batteries, oil, compact florescent lights (CFLs), mercury, and pharmaceuticals is included. With the use of CFLs on the rise, there has been increased attention on the disposal of the bulbs. More than 670 mercury-containing bulbs (largely CFLs) are discarded each year, according to the Environmental Protection Agency (EPA). Many go into local landfills, raising concerns about the release of elemental mercury. In 2008, Home Depot launched a free CFL recycling program at its stores. States also are increasingly looking at CFLs. In 2009, Maine became the first state to require CFL manufacturers to provide for the free collection of household CFLs by 2011. Other states have followed.

Montana generates more than 880,000 waste tires annually, according to the EPA.<sup>2</sup> During the 1998-99 interim, the EQC conducted a study that examined waste tire management in Montana. The report found, "at this time, Montana does not have a problem with waste tire management which is significant enough to warrant statewide

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<sup>2</sup> <http://deq.mt.gov/Recycle/Tires/index.asp>.

policy changes in the current situation."<sup>3</sup> Because less than one million waste tires are generated annually and because of the low population density in Montana, it is difficult to provide waste tire recycling programs. Other states have a greater ability to promote the use of waste tires in civil engineering projects. Waste tires are also spread over a large geographic area in Montana, which isn't attractive to tire processors and recyclers. Montana landfills also generally have sufficient capacity to accommodate scrap tires.

### **Montana Efforts**

Montana communities have established programs to handle household hazardous waste programs. The Gallatin Local Water District, for example, has produced a pamphlet that discusses options for disposing of or recycling household hazardous waste throughout the Gallatin Valley.<sup>4</sup> The Flathead County Solid Waste District holds a household hazardous waste collection day on the third Saturday of every month. In 2008, using money provided by the DEQ and EPA, the Ravalli County Environmental Health Department held two collection events for hazardous materials. At the first event 24 tons of household hazardous waste, including paint, pesticides, and solvents were collected. At a second event, 24 tons of electronic waste were collected.

The Department of Agriculture provides a waste pesticide and pesticide container collection, disposal, and recycling program in accordance with 80-8-111, MCA. From 1994 to 2008, more than 320,680 pounds of waste pesticides were disposed of through the program, according to the department. The program is funded, in part, by license fees that private, commercial, and government pesticide applicators and pesticide dealers pay to be licensed in Montana. The disposal fee is free for the first 200 pounds and \$0.50 per pound after that. Participants pre-register unusable pesticide with the department prior to collection.

Montana currently also has Extended Producer Responsibility programs in place to address household hazardous wastes and other special wastes.

- Mercury-Added Thermostat Collection Act (75-10-1501, MCA), Senate Bill No. 424, approved by the 2009 Legislature, requires thermostat manufacturers to create a take-back program for consumers to reduce mercury pollution caused by improper disposal of thermostats. The program launched in 2010. After January 1, 2010, thermostats that contain mercury also may not be offered for sale in Montana.
- Department of Agriculture and DEQ work with producers to collect and recycle unused pesticides. The DEQ works with national associations that operate a voluntary take-back program for the plastics.
- The Rechargeable Battery Recycling Corporation provides free recycling and places drop off bins in stores like Radio Shack and Staples.

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<sup>3</sup> "Status of and Alternatives for the Management of Waste Tires in Montana: Report to the 56th Legislature," EQC, 1998.

<sup>4</sup>[http://www.gallatin.mt.gov/Public\\_Documents/GallatinCoMT\\_WQDFactSheets/S008FA5A0-022E014F.0/HHW%20Disposal%20Options.pdf](http://www.gallatin.mt.gov/Public_Documents/GallatinCoMT_WQDFactSheets/S008FA5A0-022E014F.0/HHW%20Disposal%20Options.pdf)

- Electronics manufacturers have created take-back programs that are operational in Montana. Those are discussed later in this report.

## **Electronic Waste**

The 2007 Legislature amended the household hazardous waste statute discussed above, requiring the DEQ to also provide information about the recycling and safe disposal of electronic waste, including video, audio, telecommunications equipment, computers, and household appliances. There is not currently a federal mandate to recycle electronic waste (e-waste), however there have been numerous attempts to develop federal regulations. The EPA currently is involved in an education program that stresses the reuse and recycling of electronics. A federal Web site outlines options for the safe recycling of various products. The state of Montana has taken a similar approach, with the DEQ providing a Web site that informs consumers about the manufacturers and retailers who are taking back and recycling electronics. Electronics that are not recycled or reused are likely going into Montana landfills. Concerns are being raised across the country because of the volume of e-waste and because those electronics contain lead, mercury, and some other toxic materials.

In 1998, the National Safety Council Study estimated about 20 million computers became obsolete in one year. According to the EPA's most recent estimates, that number more than doubled in 2007. The EPA also estimates that only 18% of the 2.25 million tons of televisions, cell phones, and computer products that reach the end of their useful life are recycled, leaving about 1.84 million tons to be disposed of in local landfills.<sup>5</sup> "Every day Americans throw out more than 350,000 cell phones and 130,000 computers, making electronic waste the fastest-growing part of the U.S. garbage stream."<sup>6</sup> Additional data on electronic waste is provided in **Figure 5**.

**Figure 5**

Source: EPA

<b>Recycling vs. Disposal</b>				
	<b>Generated (millions of units)</b>	<b>Disposed (millions of units)</b>	<b>Recycled (millions of units)</b>	<b>Recycling Rate (by weight)</b>
Televisions	26.9	20.6	6.3	18%
Computer products*	205.5	157.3	48.2	18%
Cell phones	140.3	126.3	14.0	10%

\*Computer products include CPUs, monitors, notebooks, keyboards, mice, and hard copy peripherals.

<sup>5</sup> <http://www.epa.gov/waste/conserva/materials/ecycling/manage.htm>

<sup>6</sup> <http://www.time.com/time/magazine/article/0,9171,1870485,00.html>

The digital television transition also is expected to increase electronic waste in U.S. landfills. The EPA has estimated there are 99.1 million unused television sets in the U.S. and, earlier this year, millions of those televisions became obsolete with the government mandated switch from analog to digital. Older televisions can contain lead and cadmium. Cathode ray tubes can contain, on average, two-to-five pounds of lead. The Electronics TakeBack Coalition launched a "Take Back My TV" campaign in anticipation of the June 12, 2009 transition to support national programs that take back and recycle televisions. To date, Sony, Samsung, LG, Panasonic, Sharp, and Toshiba launched national recycling programs. Electronics recyclers are reporting an influx in older televisions, especially in states with recycling regulations and mandates. Barbara Kyle, national coordinator for the Electronics TakeBack Coalition, recently told the *New York Times* that Washington state has collected more than 3 million pounds of old televisions a month.<sup>7</sup>



Source: Take Back My TV

In the absence of federal legislation, several states and municipalities have passed legislation and ordinances guiding the collection of electronic waste. Manufacturers and retailers are also increasingly developing programs to manage their products from "cradle to grave". The laws vary significantly from state to state. Twenty states have passed legislation mandating statewide e-waste recycling.<sup>8</sup> There are themes in all programs including:

- Definition of products covered by the law
- Program funding
  - Consumer pays model
  - Producer pays model
- Collection and recycling criteria
  - Landfill ban
  - Restrict e-waste exports
  - Recycling standards
- Product restrictions
  - Labeling requirements
  - Registration requirements
  - Restrictions on certain materials
  - Retailer requirements and restrictions<sup>9</sup>

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<sup>7</sup><http://www.nytimes.com/gwire/2009/06/15/15greenwire-some-see-e-waste-crisis-trailing-switch-to-dig-81110.html>

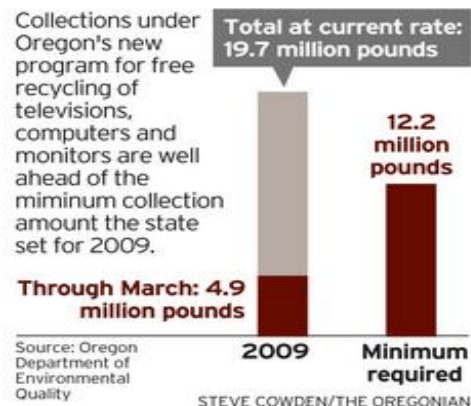
<sup>8</sup> [http://www.computertakeback.com/legislation/state\\_legislation.htm](http://www.computertakeback.com/legislation/state_legislation.htm)

<sup>9</sup> "Managing Electronic Waste: An analysis of state e-waste legislation", CRS Report for Congress, Linda Luther, September 2007.

In 2009, Indiana became one of the most recent states to implement an e-waste program. The law requires manufacturers to register with the state and take responsibility for the collection and recycling of their products. Manufacturers must recycle 60% of their sales of those products and report progress to the state. Beginning in 2012, penalties for noncompliance kick in.

Consumers in several states have responded to e-waste programs. Oregon has an E-Cycles program that provides for the free recycling of computers and televisions. Manufacturers must label their computers, monitors, and TVs and register those brands with the state DEQ. Manufacturers also pay a registration fee, which covers DEQ's administrative costs to implement Oregon E-Cycles.<sup>10</sup> Retailers are required to provide customers who purchase certain electronics with printed information about the recycling program. Retailers must also ensure that the brands they sell are listed on DEQ's manufacturer compliance list, and the products are affixed with a permanent and visible brand label. After January 1, 2010, the disposal of computers, monitors, and TVs will be prohibited in Oregon. The public quickly responded to the mandate, approved by Oregon's Legislature in 2007. "Less than five months in, Oregon's free electronics recycling program is collecting too much too fast for the largest manufacturer group involved, prompting it to ask the Oregon recyclers it works with to dial back their efforts."<sup>11</sup>

### E-waste floods in



Oregon's law is largely modeled after Washington state's 2006 electronic recycling program.<sup>12</sup> "Since January (2009) Washington State residents and small businesses have been allowed to drop off their televisions, computers and computer monitors free of charge to one of 200 collection points around the state. They have responded by dumping more than 15 million pounds of electronic waste, according to state collection data. If disposal continues at this rate, it will amount to more than five pounds for every man, woman and child per year."<sup>13</sup>

<sup>10</sup> Oregon Revised Statutes, 459A.300-365, <http://www.leg.state.or.us/ors/459a.html>

<sup>11</sup> "Oregon's electronics recycling too successful for some manufacturers," Oregonian, Scott Learn, May 12, 2009.

<sup>12</sup> Revised Codes of Washington, 70.95N, <http://apps.leg.wa.gov/RCW/default.aspx?cite=70.95N>

<sup>13</sup> [http://www.nytimes.com/2009/06/30/science/earth/30ewaste.html?pagewanted=1&\\_r=2&ref=global-home](http://www.nytimes.com/2009/06/30/science/earth/30ewaste.html?pagewanted=1&_r=2&ref=global-home)

Mandatory e-waste recycling programs, such as those banning disposal in landfills, raise a number of questions. Earlier this year the Consumer Electronics Association and the Information Technology Industry Council filed a legal challenge against a New York City law that requires electronics manufacturers to pay for door-to-door pickup of discarded electronic waste. The technology groups argue the law will increase air and noise pollution by putting more trucks on the streets and cost manufacturers more than \$200 million a year. The litigation is expected to set some precedence in terms of the requirements state and local governments can impose on manufacturers and retailers.

In addition, questions have been raised about where recycled electronics ultimately end up. In 2008, the news program *60 Minutes* conducted an investigation that showed many "recycled" electronic items end up in salvage yards in developing nations, where the toxic materials are not regulated. The investigation tracked e-waste collected at an event in Denver. "It turns out the container that started in Denver was just one of thousands of containers on an underground, often illegal smuggling route, taking America's electronic trash to the Far East."<sup>14</sup>

The 111th Congress is currently contemplating House Resolution 3106, the "Hazardous Waste Electronic Manifest Act." The legislation directs the EPA to establish a hazardous waste electronic manifest system. The system would establish a traceable record showing who is in control of the hazardous waste and its ultimate disposition. A similar bill before the 110th Congress was estimated to come at an annual cost of \$193-million-to-\$400 million. The legislation, however, also imposes a fee on the users of the system to cover the costs.

Senate Bill 1397 is also before Congress. "The Electronic Device Recycling Research and Development Act" would provide about \$85 million over the next three years to increase electronics recycling practices. Initiatives that could be funded include: providing grants for research and development into e-waste processes and practices, funding research into environmentally friendly materials for use in electronics, establishing educational curriculum for engineering students, and publishing a report from the National Academy of Sciences laying out the good and the bad in the current state of electronics recycling.

Another consideration when reviewing e-waste is reuse. An estimated 304 million electronics, including computers, TVs, VCRs, and cell phones were removed from U.S. households in 2005. However, two-thirds of those items were still in working order, according to the Consumer Electronics Association.

### **Montana Efforts**

Montana's electronic efforts start at the DEQ, which maintains a web site that helps Montanans find out where electronics recycling is available and what types of programs are being developed. Links are provided to manufacturers and retailers. In Montana, there are a number of opportunities. Some charge a processing fee to have

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<sup>14</sup><http://www.cbsnews.com/stories/2008/11/06/60minutes/main4579229.shtml?tag=contentMain;contentBody>

an item returned for recycling. Some accept all electronics, while others only accept certain brands.

The DEQ, for example, provides a link to Samsung's e-waste site. At that site, a person can print off a voucher for a product, type in a zip code, and find a recycling center. In Helena, the local U-haul collects the products and vouchers and takes them back to the company. Similar information for cell phones is listed. Radio Shack, Target, and Home Depot all accept rechargeable batteries and cell phones for recycling. Verizon refurbishes recycled phones and donates the funds for phones and airtime for victims of domestic violence. The DEQ also links to a free data eraser to assist people in preparing their electronics for donation.

A number of local repair shops and resale stores also accept obsolete and used computers. Some recycle the metals, and others refurbish the items to be resold or donated. A contact list is provided by DEQ, so businesses and corporations that are disposing of computers can work with schools and other organizations to donate the materials. State law requires state agencies to work through the Office of Public Instruction to surplus state agency computers to needy schools.<sup>15</sup> The donations are made on a first come, first-served basis. Since the program started in 1999, more than 24,000 pieces of computer equipment have been distributed to about 400 schools across the state

The DEQ also works with businesses and communities to provide electronics recycling collection events. E-waste events are licensed by the DEQ's solid waste program. The only exceptions are when collections take place at previously licensed facilities, like transfer stations. The free event license is good for up to one year, and some communities have held more than one event during the license period. The number of e-waste collection event licenses issued by the DEQ has not been consistent. In 2006, seven licenses were issued. In 2008, only two licenses were issued. In 2009, that number has increased to eight licenses. Despite an evolving web site, and the events, the DEQ is up front about the shortcomings in what it makes available. "These diverse recycling options do not add up to a particularly strong recycling market for computers in Montana, but do offer creative alternatives to landfilling."<sup>16</sup>

Bozeman was the first Montana community to host an e-waste event. It was part of the Gallatin Household Hazardous Waste Collection Event in May 2003. Additional events have been held in 2004, 2006, and 2007. Using a \$10,000 grant from Dell, Inc. a "No Computer Should Go To Waste" event was held in Bozeman and West Yellowstone in 2004. The goal was to collect 15 tons of computer equipment. Instead, 44.4 tons were collected. A second event in 2006 had to be shut down an hour early because of the level of participation and the volume of equipment collected -- about 118 tons. In 2006, a number of other Montana communities started holding e-waste events.

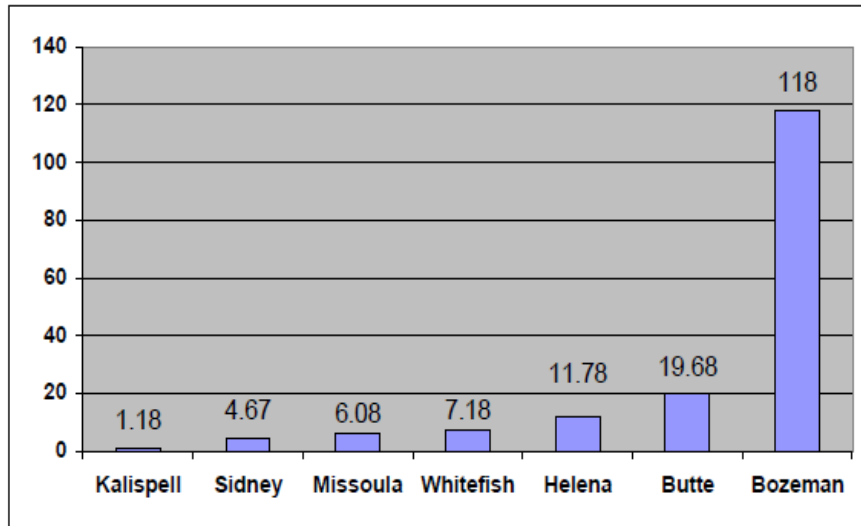
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<sup>15</sup> 18-6-101, MCA

<sup>16</sup> <http://deq.mt.gov/Recycle/cpuList.asp>



The chart below shows collection rates at e-waste events across the state, noting that only Bozeman's event was a free event.



\* Statewide, 168 tons collected in 2006. Of that, 118 tons collected at the Gallatin E-waste Event in Bozeman. This was the only collection event that was free to the public.

Source: Gallatin Local Water Quality District -- E-waste collected at recycling events in 2006

Another free event was held in 2007 in Gallatin County. Two major sponsors, Gilhousen Family Foundation and Zoot Enterprises, in addition to a number of other sponsors, helped with the event. The Gallatin Local Water Quality District organized the event, while volunteers operated it. A surplus computer and electronic sale was conducted by the Gallatin County Auditor's Office and equipment that wasn't sold was shipped to Inland Retech in Spokane for recycling. The 2007 event brought in another 68.26 tons of e-waste.<sup>17</sup>

During 2006 and 2007 e-waste events, the DEQ surveyed participants and learned that many were motivated by a desire to prevent pollution and a firm belief that electronic products still have value. In addition, participants noted they would be willing to pay (or pay more) for recycling if it meant the items were responsibly recycled and not illegally disposed of in foreign countries.

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<sup>17</sup> "2007 Electronic Waste Recycling Collection Event: Gallatin E-waste Round-up for Gallatin County" Final Report, Gallatin Local Water Quality District, October 2007.