

State of Montana

2009 Recycling and Waste Diversion Summary



Montana's Integrated Waste Management Plan

The Montana Integrated Waste Management Act (75-10-803 MCA), directs Montana to reduce the volume of solid waste that is disposed of in landfills. The Act requires a written plan for managing wastes in accordance with the Act.

The Act describes a strategy for integrated solid waste management and sets the following targets to increase rates of recycling and diversion in Montana:

- (a) 17 percent of the state's solid waste by 2008;
- (b) 19 percent of the state's solid waste by 2011; and
- (c) 22 percent of the state's solid waste by 2015.

The integrated solid waste management strategy is based on a hierarchy of prioritized approaches to managing waste. These approaches, in order of priority, are: source reduction, reuse, recycling, and composting. The Department of Environmental Quality (DEQ) assists communities, solid waste facilities, and residents with their waste reduction strategies.

Montana's recycling and diversion rates over the past seven years are as follows:

Calendar Year	Recycled/Diverted*	Calendar Year	Recycled/Diverted*
2003	15.0%	2007	18.3%
2004	15.0%	2008	19.6%
2005	18.7%	2009	19.1%
2006	18.6%		

** The Recycled/Diverted rate is likely higher than calculated since some companies that handle recyclable materials in Montana do not report their tonnages.*

Benefits of Recycling

Recycling generates significant economic benefits for communities. Recycling employs workers from a range of skill levels in a variety of jobs from materials handling, processing, and shipping to high-skilled, high-quality product manufacturing. The drive to more efficiently process recycled materials and to develop new products and markets spurs innovation, a key to long-term economic growth. Investment in recycling companies and equipment filters through the local economy and contributes to economic growth.

Equally important are the social and environmental benefits of recycling. Recycling promotes a more sustainable use of natural resources. Recycling activities across the state promote community development while conserving public resources. Landfills last longer and fewer new ones are required. Pollution is prevented, energy is saved, and less greenhouse gas is emitted.

The National Recycling Coalition's (NRC) Environmental Benefits Calculator computed that the following benefits were achieved by the materials diverted from Montana landfills in 2009.

- Greenhouse gas was reduced by the equivalent of 133,438 passenger cars being removed from the roads.

- A total of 6.9 million BTU's were saved, the equivalent of 65,382 households being removed from the power grid.
- 197,643 trees were saved by the recycling of newsprint, mixed paper, and office paper.

In addition the following *natural resource* savings were calculated:

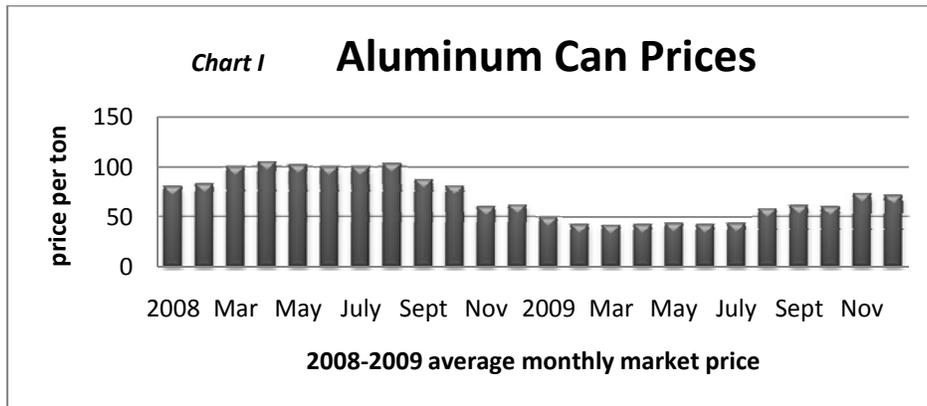
Natural Resources Saved	
Tons of Ferrous Steel Recycled	87,838
Pounds of iron ore saved per ton steel recycled	2,500
Pounds of coal saved per ton steel recycled	1,400
Pounds of limestone saved per ton steel recycled	120
Tons iron ore saved	109,798
Tons coal saved	61,487
Tons lime stone saved	5,270

As demonstrated by the results of the NRC calculations, there are numerous ways to express resource savings through recycling. Recycling saves energy otherwise used to mine and process raw materials. As Montana recycling statistics increase, the energy efficiencies become more evident. Visit the NRC site at:

www.crra.com/nrcfiles/calculator/coverletter.html

The Economy in 2009

The weakened economy in 2009 affected the amount of solid waste recycled during the year. Prices paid for recycled materials declined dramatically in the fourth quarter of 2008, and remained weak throughout most of 2009. Recycling rates in Montana softened accordingly. **Chart I** illustrates the national and international market price decline for aluminum cans in the fourth quarter of 2008, and the start of price recovery towards the end of 2009. Other recycled commodities saw similar price drops. *(Price data courtesy of Resource Recycling Magazine.)*



The market price paid for recyclable materials began to recover by the end of 2009. Unfortunately, several recycling business in Montana were forced to close during 2009 and are likely not be in a position to re-open. Much of the material previously collected for recycling ultimately ended up in landfills. DEQ has, and continues, to work with affected communities to re-build and improve the recycling infrastructure.

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The data used for the 2009 Summary was collected from the Annual License Renewal applications completed by solid waste management facilities licensed to operate in Montana. Licensed facilities include landfills, transfer facilities, compost operations, and resource recovery facilities. Non-licensed solid waste facilities include recycling businesses, end processors, and brokers. Recycling information from these non-licensed facilities is obtained through an annual Montana Recycling Survey. Response to the survey is *voluntary*, and it's important to note that several businesses chose *not* to report their 2009 recycling information. In addition, the information from some retail stores — particularly “big box” stores that recycle cardboard and plastic — is not included because this information is not currently available on a state level. Consequently, the recycling numbers reported are clearly more conservative than the amounts actually recycled.

The materials diverted from Montana landfills are sorted into two categories for reporting purposes — “Recycled Commodities” and “Materials Diverted for Beneficial Use.” The materials contained in each category are listed below.

Recycled Commodities

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- Office paper, mixed paper, newspaper, magazines, catalogs, telephone directories
 - Corrugated cardboard, chipboard or boxboard
 - Plastic
 - Glass
 - Aluminum Cans
 - Ferrous scrap metal, mixed metals, steel cans, white goods

Materials Diverted for Beneficial Use

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- Organic material: yard and landscape waste, manure, agriculture wastes, sewage sludge, animal highway mortalities (composted by MDT)
 - Carpet, textiles
 - Fly ash
 - Aggregate
 - Construction/demolition debris
 - Electronic waste, batteries
 - Automotive liquid

Montana's Recycling Data

In Montana 1.7 million tons of Municipal Solid Waste (MSW) was generated during 2009. Based on the census population figure of 967,440, every Montana resident landfilled 7.76 pounds, recycled 1.0 pound, and diverted .8 pounds of solid waste every day. The Environmental Protection Agency (EPA) reports that in 2008, — the most recent information available — the national average for each person is 4.5 pounds of waste generated and 1.5 pounds recycled each day. The amount of waste generated per day in Montana is higher — and the amount recycled is lower — than the EPA's national average. However, Montana's recycling rates are comparable to the other states in the Rocky Mountain region. The region is rural, has less recycling infrastructure, and is distant to markets and seaports. The EPA report can be seen at:

<http://www.epa.gov/wastes/nonhaz/municipal/pubs/msw2008rpt.pdf>.

Montana's state government offices participated in recycling programs. During 2009, state offices contributed by recycling a total of 465 tons of paper and cardboard. This is more than double the 203 tons reported in 2008. Many state offices also have collection containers for aluminum cans and plastic bottles; however, these products are not handled as a state service, but rather on an employee level.

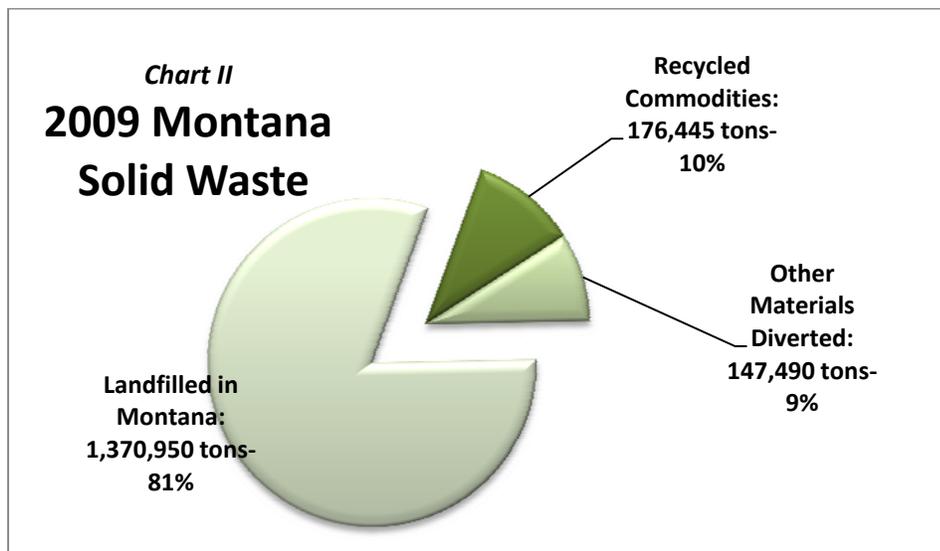
Table 1 sorts into three categories the waste that was generated in Montana during 2009— waste that was landfilled, commodities that were recycled, and material that was diverted in some manner from landfills (e.g., composting).

TABLE 1.

2009 Montana Data		Tons	Percentage of Total
Amount of Solid Waste Landfilled		1,370,950	80.9%
Amount of Solid Waste Recycled	176,445		10.4%
Amount of Solid Waste Diverted from Landfill	147,490		8.7%
Total Amount Recycled and Diverted		323,935	19.1%
Total Solid Waste Generated in Montana		1,694,885	100.0%

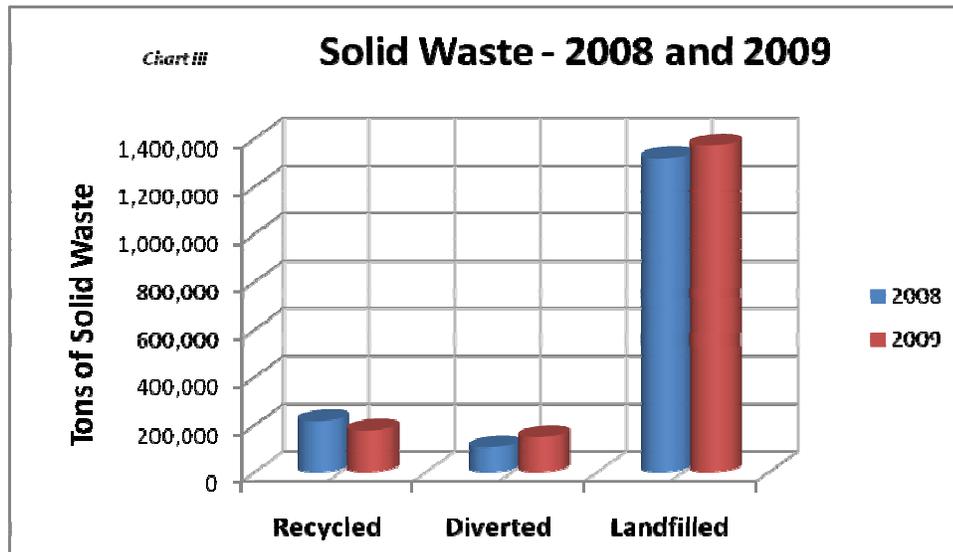
Chart II shows the breakdown of the state's solid waste. During 2009, approximately 81 percent of the solid waste generated in Montana was sent to landfills, and 19 percent was recycled or diverted from the landfill.

BioCycle Magazine, in collaboration with Columbia University, conducts a biennial *State of Garbage in America* report. The 2008 reports shows the Rocky Mountain region — Montana, Idaho, Wyoming, Utah, Colorado, Arizona, and New Mexico — landfilled 88 percent of the total waste stream. The remaining 12 percent of the wastestream was recycled or diverted for beneficial use. www.jgpress.com/archives/free/002191.html



As previously mentioned, the drop in the recycling market prices during the last quarter of 2008 and the beginning of 2009 affected the amount of material recycled in Montana. As shown in Chart III, the amount of materials recycled during 2009 decreased by 39,833 tons as compared to 2008.

The material not recycled was landfilled, which increased the amount landfilled from 2008 to 2009 by 53,626 tons. The "Other Materials Diverted" in Montana increased by 43,537 tons. This can be partly attributed to the growth in wood and yard waste diversion at landfill and transfer station sites. Also, in 2009 there was a significant amount of concrete, asphalt, and fly ash diverted from landfills.



In summary, recycling is effectively working in Montana despite the poor economic climate. Montana's recycling rate is generally increasing, and a variety of resources are being saved by the activities of those recycling in our state. For more information on recycling, and to read case studies on DEQ recycling/diversion projects, visit the DEQ website at www.recycle.mt.gov.