

State of Montana

2011 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 Montana Department of Environmental Quality (DEQ) assists communities, solid waste facilities, and residents with their waste reduction strategies.

Montana's recycling and diversion rates during the past nine years are as follows:

Calendar Year	Recycled/Diverted*	Calendar Year	Recycled/Diverted*
2003	15.0%	2008	19.6%
2004	15.0%	2009	19.1%
2005	18.7%	2010	19.7%
2006	18.6%	2011	19.4%
2007	18.3%		

* *The Recycled/Diverted rate is actually higher than indicated since many businesses that recycle in Montana, or market recyclable materials, 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 highly-technical and high-quality product manufacturing. The drive to more efficiently process recycled materials, and to develop new products and markets, spurs innovation which is 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 necessary. 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 2011:

- Greenhouse gas was reduced by the equivalent of 188,463 passenger cars being removed from the roads.
- A total of 10.8 million BTUs were saved by recycling.
- 163,597 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	
2011 Ferrous Steel Recycled	82,089 Tons
Iron ore saved per ton steel recycled – 2,500 lbs.	
Coal saved per ton steel recycled – 1,400 lbs.	
Limestone saved per ton steel recycled – 120 lbs.	
Iron ore saved	102,611 Tons
Coal saved	57,462 Tons
Limestone saved	4,925 Tons

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. View the NRC calculator at: <http://www.crra.com/nrcfiles/calculator/coverletter.html>

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The data used for the 2011 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 some small recycling operations, end processors, and brokers. Recycling information from these non-licensed facilities is obtained through an annual survey. Response to the survey is *voluntary*, and it’s important to note that several businesses chose *not* to divulge their 2011 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 “Other Recycled or Diverted.” The materials contained in each category are listed on page 3.

Recycled Commodities

- 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

Other Recycled or Diverted

- 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 fluids, waste vegetable oil

Montana's Recycling Data

According to the data received; 1,694,085 tons of Municipal Solid Waste (MSW) was generated in Montana during 2011. Of this amount, 1,366,266 tons were landfilled and 327,859 tons were recycled/diverted. Using conservative landfill average pricing of \$33/ton, the cost of landfilling solid waste in 2011 was \$45,085,458.

The US Census Bureau estimates the 2011 population of Montana to be 998,199 residents. (<http://quickfacts.census.gov/qfd/states/30000.html>). Using MSW and population data, the following averaged rates have been calculated for calendar year 2011.

- Montanans generated 9.3 pounds/person/day of solid waste,
- Montanans landfilled 7.5 pounds/person/day of solid waste, and
- Montanans recycled/diverted 1.8 pounds/person/day of commodities from the solid waste stream.

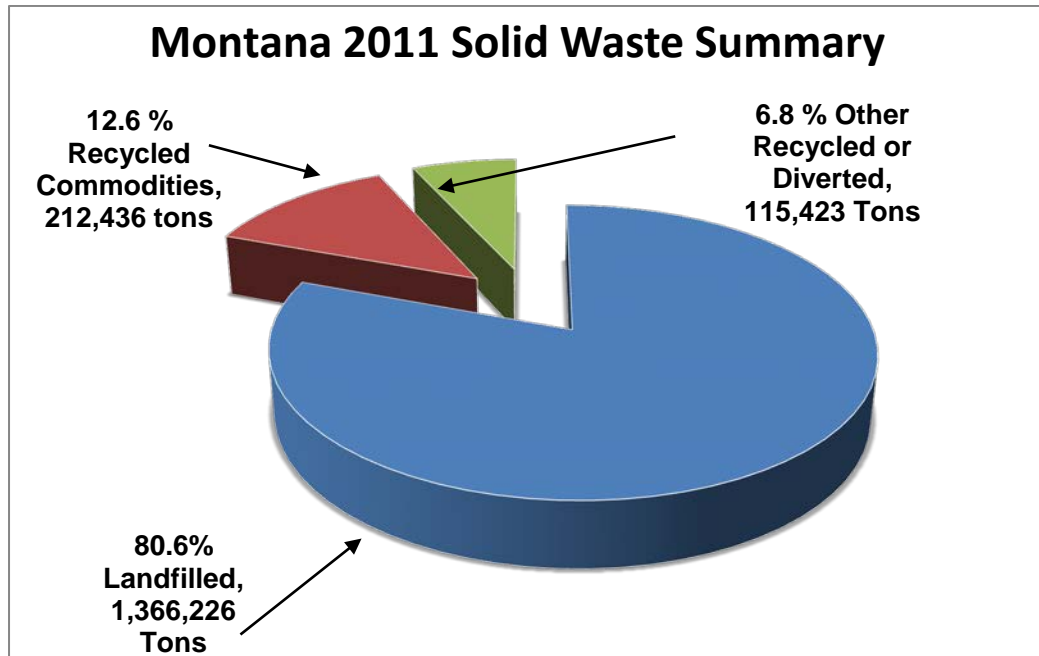
On a national level, the Environmental Protection Agency (EPA) reports an average of 4.43 pounds per U.S. resident per day is destined for a landfill, with 1.51 pounds recycled/diverted each day. The EPA 2010 report can be viewed at: http://www.epa.gov/wastes/nonhaz/municipal/pubs/msw_2010_factsheet.pdf.

Table 1 sorts into three categories the waste that was generated in Montana during 2011 – waste that was landfilled, commodities that were recycled, and material that was recycled or diverted in some manner from landfills (e.g., composting).

2011 Montana Data			
		Tons	Percentage
Total Amount of Solid Waste Landfilled		1,366,226	80.6%
Amount of Solid Waste Recycled	212,436	12.6%	
Other Recycled/Diverted	115,423	6.8%	
Total Amount Recycled and Diverted		327,859	19.4%
Total Solid Waste Generated in MT		1,697,085	100%

Chart I below illustrates the breakdown of the state's solid waste. During 2011, the reported amounts show that 80.6 percent of the solid waste generated in Montana was sent to landfills, and 19.4 percent was recycled or diverted from the landfill for another use.

Chart I.



Other Recycled or Diverted

The remaining reported materials, "Other Recycled or Diverted," decreased by a large amount. Less material diverted for composting was reported. The larger factor was the decrease in the amounts of aggregate and fly ash reported for 2011. High fuel prices and a weak construction market in 2011 may have been factors contributing to these heavy materials not being transported to recyclers.

Summary

Recycling in Montana is effectively working and shows consistency even through the tough economic climate of 2011. As both public demand and recycling infrastructure increases, the recycling/diversion rate should also increase. However, to meet the goal of 22% recycling/diversion for 2015; Montana's citizens, state and local governments, and the private sector must further develop and expand partnerships to improve the collection, storage and transportation of recyclable commodities. For more information on recycling, and to read case studies about DEQ's recycling/diversion projects, visit the DEQ website at www.recycle.mt.gov.