

Washington's 2011 Recycling Produces Results

Recycling in Washington continues to result in important environmental and economic gains. In 2011, residents and businesses recycled and diverted from landfills over 50 percent of the wastes in Washington. While reducing the amount of waste going to landfills is indeed significant, recycling is more than a way to manage wastes – it's an important way to reduce pollution, conserve natural resources and create jobs.

Recycling saves energy and reduces greenhouse gas emissions

Using recycled materials to make new paper, plastic, glass, and metal products saves energy. Collecting, processing, and transporting recycled materials almost always uses less energy than extracting, refining, transporting, and processing raw materials. And less energy use also means fewer greenhouse gas (GHG) emissions. The 8.4 million tons of material collected for recycling in Washington in 2011:

- Saved energy equivalent to 1.1 billion gallons of gasoline or more than 139 trillion British thermal units (BTUs) of energy. This is enough to power 1.2 million homes for a year - or nearly half the households in Washington.¹
- Prevented 2.7 million tons of GHG emissions – about 798 pounds per person. This is similar to keeping 1.9 million cars off the road each year – almost half of the passenger cars in Washington.²

Recycling conserves natural resources and creates green jobs

Recycling reduces the need for mining or logging, along with their harmful environmental effects. Supplying industry with recycled materials, instead of virgin resources from forests and mines, conserves these scarce resources and the habitat they are found in. Using recycled materials also moves jobs into the green economy. Washington State defines green jobs as those that promote environmental protection and energy independence.

- In 2011, Washington State recycling programs collected 8.4 million tons of material to supply industry with commodities such as metals, plastics, paper, glass, wood, and construction and demolition scrap.
- Manufacturing recycled products requires, on average, 17 times less energy than manufacturing the same products from virgin materials.³
- By recycling over 1.6 million tons of scrap metal in 2011, Washington State avoided mining and processing two million tons of iron ore, 800,000 tons of coal, and 32,000 tons of limestone.⁴
- In 2008, Washington State firms employed an estimated 4,456 people in green jobs, involving collection, hauling, transport, processing, or remanufacture of recyclable materials. 2009 showed an increase in estimated green jobs despite the economic recession.⁵

¹ Environmental Protection Agency (EPA) Waste Reduction Model (WaRM): http://epa.gov/climatechange/wycd/waste/calculators/WaRM_home.html.

² GHG emissions measured in metric tons carbon equivalent (MTCE); EPA WaRM; Washington Department of Licensing; EPA Emission Facts.

³ University of Massachusetts Amherst: http://www.umass.edu/recycle/recycling_benefits.shtml

⁴ *Ibid.*

⁵ Government jobs excluded. Washington State Green Economy Jobs (2008 & 2009), Washington State Employment Security Department.

Recycling lessens emissions of air and water pollutants

Recycling keeps materials out of landfills where they can contaminate groundwater systems and generate greenhouse gases. It also reduces the amount of pollution entering the air and water and keeps harmful materials out of incinerators that can pollute the air and create ash residue. Compared to using raw materials, using recycled aluminum cans reduces both energy consumption and air pollution by 95 percent.⁶

Energy & Greenhouse Gas Savings by Recycling in Washington (2011)⁷

Recycled Material	Tons Recycled ⁸	BTUs Saved (millions)	GHGs Avoided (MTCE)
Aluminum Cans	13,115	2,010,923	31,949
Steel Cans	17,975	369,058	9,039
Glass	117,340	315,758	10,233
Plastics ⁹	74,679	3,082,700	21,004
Corrugated Cardboard	542,333	8,475,422	380,909
Mixed Paper ¹⁰	626,134	11,363,888	414,275
Wood ¹¹	804,728	5,276,250	-76,303
Yard Trimmings	937,219	302,013	-21,115
Food Scraps	317,389	69,198	49,937
Other Organics	272,699	-5,028	22,797
Mixed Metals	1,648,539	100,904,925	1,805,140
Landclearing Debris	285,125	330,497	-64,340
Carpet	3,653	80,855	2,402
Computers/Electronics	31,148	942,425	20,288
Construction & Demolition Debris ¹²	2,267,261	4,130,006	76,153
Tires	48,637	1,316,564	16,578
Subtotal	8,007,974	138,965,455	2,698,946
Other Recycling	434,935	Data not available for all material categories	
Total	8,442,909		

More information

Beyond Waste program:

<http://www.ecy.wa.gov/beyondwaste/>.

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⁶ Chiras, Daniel D. (2012) Environmental Science. Burlington, MA: Jones & Bartlett Learning.

⁷ Washington Department of Ecology's 2011 Recycling Survey: <http://www.ecy.wa.gov/programs/swfa/solidwastedata/>. Savings are relative to energy required and GHGs emitted during production of products using virgin materials; EPA WaRM.

⁸ For this analysis, recycling includes composting and burning for energy.

⁹ Includes HDPE, PET, and mixed plastics (EPA WaRM).

¹⁰ Includes mixed paper, newspaper, and high-grade paper (EPA WaRM).

¹¹ Includes reused and recycled dimensional lumber, recycled wood and wood burned for energy recovery (EPA WaRM).

¹² Includes fly ash, concrete/asphalt, asphalt shingles, and gypsum/drywall (EPA WaRM).