



Working to Build Zero Waste Communities

Eco-Cycle's Ten Reasons to Recycle

1. Recycling prevents resource destruction.

To understand the value of recycling, we must look at the entire lifecycle of a product — from the extraction and processing of raw materials, to the manufacture and consumption of the product, and then to its final disposal. Recycling creates a closed-loop system where discarded products are returned back to manufacturers for use in new products. This prevents the pollution and destruction that occurs when virgin materials—like trees and precious metals—are extracted from the earth.

Sustainable resource management, through recycling and similar activities like water and energy conservation and green building, is no longer a personal decision but a necessary practice in a world with a growing population and a finite resource base. We must greatly expand recycling infrastructure around the world and incorporate sustainability into everyday personal and business practices for the future of our economy, our health and our environment.

Just look at what one community can do: using the National Recycling Coalition's environmental savings calculator, the collection of 135 tons of recyclables at the Eco-Cycle/Broomfield Recycling Center for the month of January 2006 saved the equivalent of 777,910 gallons of water, 1,889 trees, 549,332 kilowatt hours of energy, 6,845 pounds of air pollutants and 1,473 cubic yards of landfill space. And that was in just one month!

2. Recycling prevents pollution.

When recycled materials are used in place of virgin materials during manufacturing, we avoid the environmental damage caused by mining for metals, drilling for petroleum, and harvesting trees. Of course there is always some degree of pollution created in any manufacturing process, including recycling, but production using recycled material is dramatically less polluting and resource intensive than production from virgin materials:

- Producing recycled white paper creates 74% less air pollution and 35% less water pollution than producing paper from virgin fibers.
- Using recycled cans instead of extracting ore to make aluminum cans produces 95% less air pollution and 97% less water pollution.
- Recycling and remanufacturing are 194 times more effective in reducing greenhouse gas emissions than landfilling and virgin manufacturing.

3. Recycling saves energy.

Every year, Americans generate more than 230 million tons of solid waste. By recycling about 30% of our waste every year, Americans save the energy equivalent of 11.9 billion gallons of gasoline and reduce the greenhouse gas equivalent of taking 25 million cars off the road. For every one million tons of material recycled rather than landfilled, we save the energy equivalent of

- Aluminum: 35,680,000 barrels of oil
- Glass: 460,000 barrels of oil
- Newspaper: 2,920,000 barrels of oil
- Office paper: 1,760,000 barrels of oil
- Mixed residential paper: 4,010,000 barrels of oil
- PET (plastic): 9,100,000 barrels of oil
- HDPE (plastic): 8,870,000 barrels of oil

4. Recycling saves money.

It is untrue that recycling costs more than disposal. Selling recyclable materials offsets the extra costs of collecting and processing recyclables, making recycling the cheaper option for the community. For example, in Boulder, landfilling costs more than three times as much as recycling as seen in the following table.

The town of Loveland, Colorado built an efficient, government-operated recycling program that saves the town more than \$40 per ton over landfilling. Loveland does not require residents to recycle yet still boasts a residential recycling rate near 55%, making the community a huge success story in the Rocky Mountain region.

	Trash	Recycling
Collection	\$60/ton	\$70/ton
Landfill fees	\$20/ton	
Processing at recycling facility		\$45/ton
Sale of material		(\$90/ton)
NET COST	\$80/ton	\$25/ton

Plus, all the environmental and public health benefits of recycling, such as reducing pollution and greenhouse gas emissions and the avoided health care costs from a cleaner environment, have economic value as well— more than \$55 per ton compared to landfilling.

5. Landfills and incinerators are economic losers.

Landfill owners are only responsible for their landfill for 30 years after it closes even though the EPA has acknowledged all landfills will eventually leak and their toxic leachate, or garbage juice, can seep into and contaminate soil and groundwater supplies. Roughly 20% of the sites on the Superfund list (the nation's most hazardous sites) are solid waste landfills, including Marshall Landfill in Boulder County and Lowry Landfill in Denver. Clean-up costs at these sites commonly run into the tens to hundreds of millions of dollars and increasingly fall upon the shoulders of taxpayers rather than the polluting industries. It was recently ruled by the EPA that the city of Boulder is financially responsible *in perpetuity* for maintaining the integrity of the "cap" on the 160 acre Marshall Landfill site to prevent any rainwater from entering the old landfill. No one knows how much this will cost, but it will certainly be in the millions of dollars, and these future landfill costs will compete against other city services in tight city budget years.

Incinerators require vast amounts of capital to construct—upwards of hundreds of millions of dollars—and then require a continual stream of garbage to stay operational, thus creating an economic incentive to waste more and recover less. They are hands down the most expensive waste treatment option, and worse yet, this investment provides very few local jobs. Many U.S. communities have found themselves financially in debt to the incinerator for failing to supply the necessary trash volume under long-term "put or pay" contracts. To repay the bank, a community must perpetually feed the incinerator with waste, thus preventing the growth of recycling or composting. Furthermore, because of the low heating value of mixed garbage, many plants cannot compete with open market electricity prices and will look for a town or utility to guarantee an inflated price.

6. Landfills and incinerators are major sources of pollution.

First, landfills are the largest source of human-caused methane, a greenhouse gas 23 times more powerful at trapping heat than carbon dioxide. Second, landfill gas contains hazardous air pollutants including known carcinogens, or cancer-causing substances. Landfill gas contributes to ambient air pollution and may adversely affect the health of adjacent residents and the environment. Third, landfill leachate contains a myriad of pollutants ranging from heavy metals to priority pollutants to organic compounds which can all contaminate groundwater. Once groundwater is contaminated, it is virtually impossible to clean up and the EPA recommends abandoning the source. Groundwater sources provide the drinking water for more than 50% of U.S. residents and are used to irrigate about a third of our cropland.




Despite claims by the incineration industry of reduced air pollution emissions, no new incinerators have been built in the U.S. since 1995. Incinerators are a source of dioxin, the most toxic substance known to man. They also produce mercury, a powerful neurotoxin, as well as other dangerous heavy metals including lead, cadmium, arsenic and chromium. Other byproducts of concern include particulate matter, greenhouse gases,

and potentially unknown chemical compounds from incomplete combustion. While high-tech pollution devices can be installed to reduce smokestack emissions, these dangerous

pollutants are simply transferred to the fly ash, the hazardous residue which must then be disposed of at a hazardous waste landfill.

7. Recycling creates jobs.

For every one job at a landfill, there are ten jobs in recycling processing and 25 jobs in recycling-based manufacturers. The recycling industry employs more workers than the auto industry.

Process	Jobs created (per 10,000 tons per year)
Landfilling	
Recycling processing	
Recycling-based manufacturing	

8. Our current system of one-way use is not sustainable.

There is a limited supply of productive land on a planet that is 70% water. Several organizations developed an ecological footprint analysis to determine how much land it takes to support specific consumption habits such as driving a car, eating meat, and heating your home. It is currently estimated that we are consuming at a rate of 123%, using 23% more resources than the Earth can sustain. This means we are jeopardizing the ability of future generations to meet their needs. The effects of this over-consumption can also be seen today in everything from acid mine drainage and declining biodiversity to increasing conflict over access and ownership of the shrinking natural resources on the planet.

9. Our current system of one-way use is not just.

As populations continue to increase and seek the affluence and consumerism of the Western culture, there will be increasing conflict over our limited supply of resources, everything from precious metals to clean water. Over the past couple of years, China’s rapid growth has driven the price of metal to all-time records, levels high enough to entice criminals to steal manhole covers, aluminum siding from homes, and copper wire and pipes from all over the U.S. There are violent, ongoing conflicts in Africa over rights to precious minerals such as the diamond wars in Sierra Leone, Liberia, and Guinea, and a coltan (mineral used in cell phones and computer chips) war in the Democratic Republic of the Congo. Wars for fossil fuels and clean water are already developing.

10. Recycling isn't the only answer.

Recycling alone will not end resource destruction but it's an important step along the road to a world of Zero Emissions and Zero Waste, or Z-squared. A Z-squared community promotes the sustainable and equitable use and distribution of resources.

Zero Emissions, of course, refers to emissions from transportation, energy and production--choosing alternative means of travel, alternative fuels, conservation, efficiencies, and renewable, abundant and non-polluting sources of energy like wind and solar.

Zero Waste refers to redesigning our production and consumption systems to use resources more efficiently, to prevent waste before it happens, and to incorporate all leftover materials back into the production cycle rather than discarding them as waste. If we pair Zero Emissions and Zero Waste together, we have our solution.

Each of us has an important role to play in creating a Z-squared system:

- **Plan:** Elected officials need to be sure that every decision they make as public servants is aiming for Z-squared, and that rules and regulations reward Z-squared practices rather than perpetuate the unsustainable status quo.
- **Design:** Businesses need to design every product and service for Z-squared, from production to recovery.
- **Choose:** This is the key to Z-squared. Every decision each of us makes--including the products we purchase, the energy source we use, our means of transportation, and even the elected officials we vote for--is a decision either for or against a sustainable, Z-squared future. Which future are you supporting?

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