

# The SBC's Online Guide to Moving Missoula Toward Zero Waste

## Introduction to zero waste . . . . . 3

*What is Zero Waste? • Why choose zero waste? • Waste by the numbers. • Is zero waste possible?  
How can we move toward zero waste? • Can cities produce zero waste? • Mayor Engen's Proclamation  
Case studies: Sierra Nevada Brewing & Blue Marble Biomaterials.*

## Reduce . . . . . 8

*Letter from SBC Board Member. • A hierarchy of single use. • Junk mail.  
Health Department policies. • Packaging matters. • Case study: Staples.  
Styrofoam (EPS) • Plastic bags. • Reducing upstream waste. • Reducing office waste.*

## CALENDAR OF EVENTS: Waste-reduction and Earth Day events during April 2015

*Organizing low-waste events • Is it more expensive? • Case study: Sports venues.*

## Redesign . . . . . 22

*Biomimicry. • The original circular economy. • Case study • Nature-inspired zero waste. • DesignLens  
Business case for redesign. • \$100 million available. • Redesign creates jobs. • Redesign case studies.  
Direct costs of waste. • EPR. • Waste audits. • Case study: St. Patrick's Hospital.*

## Reuse and Repair . . . . . 34

*Construction and demolition debris. • Case study: A business renovation.  
Repairing, repurposing, renting, borrowing, and donating.  
Case study: Donation Warehouse. • The sharing economy.  
MAP: Free drop-off locations for items reused locally*

## Recycle . . . . . 44

*Why is waste such a mess in Missoula? • Top 6 contaminants  
Pre- vs. post-consumer content. • 7 key recycling streams.  
Recycling pick-up services. • Blue bags.  
MAP: Free drop-off recycling locations  
Waste & recycling by the numbers. • Electronic waste.  
CRTs. • Case study: Opportunity E-Cycling.*

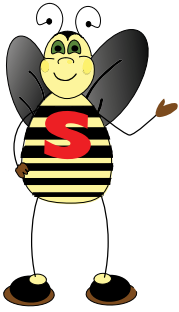
## Waste. . . . . 54

*Food and organic wastes. • Sewer wastes. • Composting.  
Case studies: Local leaders. • Missoula's landfill.  
The real deal on glass. • Case study: Bayern Brewing.  
Hazardous wastes. • Trends to watch: Incineration*

## SBC MEMBER DIRECTORY



# Moving Missoula Toward Zero Waste Guide



## Research and writing by

Jenny Mish, Executive Director, SBC  
Kris Heitkamp, Energy Corps Member

With thanks to Zero Waste Missoula and many others who helped.



## Design and layout by

Stephanie Ralls, Assistant Director, SBC

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[www.SustainableBusinessCouncil.org](http://www.SustainableBusinessCouncil.org) | [info@SustainableBusinessCouncil.org](mailto:info@SustainableBusinessCouncil.org)  
415 N Higgins Suite 119, Missoula, MT 59802



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## What is zero waste?

Waste is usually considered anything that goes into the all-encompassing trashcan, whether it's rotten food, a broken cell phone, or an empty milk jug. But are those things really waste or are they just resources being wasted? In a zero waste world, waste is a verb not a noun; waste is something that we make happen as opposed to something that just is.

**Zero Waste is a goal and guiding principle for changing lifestyles and practices to emulate nature, where all discarded materials are designed to become resources for others to use.** This means addressing waste generation both “upstream” in production and “downstream” in consumption to:

- Avoid volume and toxicity of waste •
- Conserve and recover resources •
- Not burn or bury them •

*-Zero Waste International Alliance*

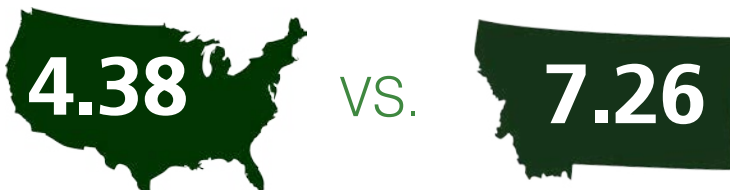
The goal of zero waste is to eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health. We can all help to “close the loop,” making every waste into a resource. After all, we too are part of nature.

## WHY CHOOSE ZERO WASTE?

Moving Toward Zero Waste is about recovering resources, not burning or burying them. It often means saving money, and always means preserving our lands, waters, and air, as well as human health. By fully using resources, we avoid toxic waste and discharges.

### POUNDS OF WASTE GENERATED PER DAY:

Americans vs. Montanans



### MONTANA DEQ LANDFILL DIVERSION GOAL BY 2015

# 25%

Compared to US average of 34.5%

➔ [Click here for more “Waste & recycling by the numbers”](#)

# Can cities produce zero waste?

Communities worldwide are committing to zero waste goals. First was Canberra, Australia in 1996. New Zealand pledged in 2008 to eliminate landfills after 72% of its towns set zero waste goals. The [European Parliament](#) followed suit in 2012, anticipating that “By 2020 waste is managed as a resource. Waste generated per capita is in absolute decline.” These communities are creating business opportunities, changing infrastructure, raising public awareness and participation, and building local climate resilience.

## San Francisco

Adopted a Zero Waste Strategy in 2002 with a goal of 90% diversion.

**2006:** Mandatory construction and demolition debris recovery program.

**2007-2008:** Grocery ban on plastic bags.

**2009-2010:** Household composting/recycling program with fines and incentives.

**2012-2013:** Retail and restaurant ban on plastic bags.

**2014:** Plastic water bottle ban.

**NEXT:** Product packaging and disposable diapers.

**In 2012, SF reached 80% diversion, setting national records for the highest rates of recycling and composting in North America.**

## Seattle

Adopted a Zero Waste Strategy with the goal of 70% diversion by 2025.

**2008:** Styrofoam ban. Expanded recycling and composting.

**2009:** Expanded organic waste pick-up service.

**2010:** Required fast food restaurants to supply recycling bins.

**2010:** Created “Do not mail registry.”

**2012:** Plastic bag ban.

**2015:** Implemented fines for compostables in trash.

**NEXT:** Plastic bag ban and construction/demo waste recycling requirements.

## Other US communities include:

[Middletown, Connecticut](#) (pop: 47,000)

[Kaua’i County, Hawaii](#) (pop: 66,000)

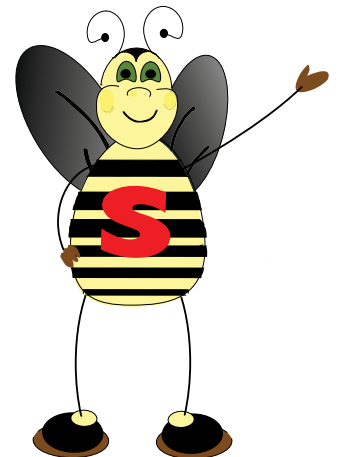
[Boulder, Colorado](#) (pop: 100,000)

[Fort Collins, Colorado](#) (pop: 150,000)

[Minneapolis, Minnesota](#) (pop: 390,000)

## Missoula??

The City of Missoula’s Climate Action Plan aims for a goal of carbon neutrality by 2025. A complementary community based project is [Climate Smart Missoula](#), which aims to coordinate community-wide climate strategies. One part of this effort is [Zero Waste Missoula](#), a coalition aiming to move Missoula toward zero waste. Mayor Engen has proclaimed that April 2015 is Moving Missoula Toward Zero Waste month!



# IS ZERO WASTE POSSIBLE?

As a lifestyle, the answer is clearly YES! [Blogger Bea Johnson](#) has lived waste-free with her family since 2008. [Lauren Singer](#) hasn't made trash in two years—she says she has saved money, eaten better, and become happier as a result. In Missoula, Professor Bradley Layton has been landfill negative since 2010. As the Director of the Energy Technology Program at Missoula College, Layton says that his lifestyle “challenges the status quo and keeps Missoula weird.”

Each year, hundreds of events aim to generate zero waste. For example, 15,000 people attended the 2014 Great Race in Pittsburgh, which achieved an 89% diversion rate. In California, the Del Mar County Fairgrounds has diverted 97% of wastes since 2002. In 2004, Oakland's *We the Planet* Festival only sent 20 pounds to the landfill, a 98% diversion rate.

See the Sierra Nevada case study on page 7 for a 98.8% zero waste business.

# How can we move toward zero waste?

Moving toward zero waste is a choice. It is more than just remembering to recycle that plastic milk jug (rinsing it out and removing the lid). It challenges you and your business to take a look at what you throw away and rethink your notion of waste.

The fact is that our contemporary society is designed to make waste. From mine tailings to shrink wrap to kitchen scraps, “waste” is a sign of inefficiency. Ask yourself this question: if you're not for zero waste, how much waste are you for?

We can start to move toward zero waste by changing how we think about the stuff we call trash. For businesses, moving toward zero waste means looking for inefficiencies, from product design to sourcing to customer use.

Moving toward zero waste requires a simple paradigm shift. Find ways to reduce waste before you make it. Start thinking of the waste you do make as undiscovered resources waiting to be recovered. Reuse when you can, repair when possible, and recycle as much as Missoula recycling options allow. Doing just that much will reduce your waste footprint and likely keep money in your pocket.



## PROCLAMATION

- WHEREAS, Waste is not inevitable and is a significant and untapped resource; and
- WHEREAS, our community can substantially reduce the amount of resources we send to the landfill as waste through an integrated approach to waste reduction, reuse, and recycling; and
- WHEREAS, through education, engagement of local business leaders, and leadership from citizens and local government our community can lead the region in moving toward Zero Waste; and
- WHEREAS, a robust reuse and recycling sector can contribute to building a vibrant and sustainable Missoula economy; and
- WHEREAS, the City of Missoula supports the Missoula Climate Initiative, which has identified waste reduction as a key to mitigating climate change.

NOW, THEREFORE, I, John Engen, Mayor of the City of Missoula, in the State of Montana, do hereby proclaim the month of April 2015, in Missoula, Montana as:

## MOVING MISSOULA TOWARD ZERO WASTE MONTH

IN WITNESS WHEREOF, I have hereunto set my hand and caused the great seal of the City of Missoula, in the State of Montana, to be affixed at Missoula, Montana, this 23rd day of March, in the year two thousand fifteen.



John Engen  
Mayor

# CASE STUDIES

## Blue Marble Biomaterials:

A circular economy business based in Missoula

“We believe there is no waste, only wasted resources, which is why we have designed our system to recapture and repurpose all ‘waste’ material.”

Blue Marble’s products replace petroleum-based chemical manufacturing ingredients in the specialty chemical submarket with sustainable biochemicals. These products are derived from non-virgin biomass such as forestry and agricultural byproducts, spent brewers grain, and coffee grounds.

Many of the inputs used would otherwise fill landfills, compost centers, or burn piles. Because Blue Marble doesn’t use petroleum inputs, the company can offer customers stable and guaranteed pricing, unlike traditional competitors.

Unfortunately for Missoula, Blue Marble can no longer gather used coffee grounds locally because of the volume needed. But they continue closing the loop every day in Missoula and in other locations around the country.

## Sustainable Manufacturing



# Sierra Nevada Brewing:

## 99.8% zero waste since 2012

As the second largest craft brewer and the 7th largest brewer in the US, Sierra Nevada's two primary sustainability drivers are to improve environmental health and save money. In 2013, Sierra Nevada (SN) **diverted over 52,000 tons of waste from landfills and incineration facilities, saved \$6.2 million in disposal costs, and earned \$980,000 in revenue** from sustainability efforts.

### In a nutshell, here's how they do it:

#### Reduce:

- SN constantly looks for ways to reduce waste before it is produced, for example in packaging:
  - SN's 12-pack boxes were redesigned without dividers and lips on the outside of the boxes, making them fit better on pallets and reducing damage.
  - SN asked vendors to stop sending individually-wrapped items for resale, which led to packaging changes upstream.
- SN built a two-mile rail spur to access major rail lines, both for shipping products to market and to bring in supplies. SN trucks never travel empty.
- SN's 750 employees receive incentives to reduce wastes. Employee benefits are amazing, including Kleen Kanteens, SN University, and a free onsite bike mechanic.

***"The success of our sustainability efforts rests on the continuing education of brewery employees."***

#### Reuse:

- Everything from bubble wrap to broken pallets is reused in-house. Grain sacks are donated to landscapers and burlap sacks to beekeepers. Unusable beer labels become notepads, and vendors get their boxes back to ship again.

#### Recycle:

- 100% of spent grain and yeast is fed to local cattle. All spent cooking oil becomes biodiesel.
- Cardboard, shrink wrap, glass, scrap metal, wood, paper, and plastic strapping are some of the recycled items.
- Careful tracking and regular waste audits identify opportunities to divert additional materials from the landfill.

***"We invested in this state-of-the-art equipment due to a lack of composting options in our region."***

#### Rot:

- An enormous "HotRot" composting system transforms organic wastes, including spent hops and grain, and all food and paper towels from the brewery, restaurant, and concert venue. The resulting fertilizer is used on SN's hop and barley fields and restaurant gardens, which grow 30,000 pounds of produce annually.
- An onsite wastewater treatment operation (anaerobic digester) makes biogas that heats boilers. Steam and CO<sub>2</sub> are captured and used in the brewing process. Heat recovery on brew kettles is used for lighting, preheating, and water reduction.

**What's the 0.02% that Sierra Nevada sends to the landfill? Mylar and paper or metal that has plastic embedded. Everything else is a resource!**



# REDUCE

## Dearest Missoulians,



I'm so glad you're reading the SBC's Zero Waste Guide!

Several years ago I pledged to avoid single use products for one year. It was incredibly difficult because the norm is plastic serveware, bags, lids, packets of condiments--single use is everywhere. That year of work woke me up and changed my life. It's time to take a hard look at single use in our community. I'm not alone: there are lots of people in Missoula wanting to step into the future and reduce waste. The obstacles are real, but what we do personally and in our businesses is what matters the most.

In truth, we can't recycle many of the items we commonly use. The average paper coffee cup is not recyclable due to wax and plastic linings for temperature control and extended durability.

"Compostable" single use plastic items are still waste that we can easily avoid-- go ahead and test one or two of those items in your own compost and see if they actually break down. This Guide will help you spot the greenwashing and recycle smarter.

Recently at a local bar, everyone was being served in plastic. I asked for a glass and was told "I can't serve you in glass."

So I politely said no thanks to a drink. My friends and I were there to see some great live music so we didn't really mind not having a drink. Later the bartender came over and said she'd serve us in glass.

So seven of us ordered drinks. It's just a matter of knowing the right thing and doing it. Vote with your dollar!

I'm thrilled to see a comprehensive local recycling guide. Also consider that the most effective thing you can do is to simply **REFUSE SINGLE USE**. That's why the first half of this Guide is about the steps that come before recycling. Bring a coffee mug with you. Keep a couple in the car and one in your bag. Leave a few at work. Use refillable water bottles. Hit up bulk sections to avoid the crazy amount of packaging that our food comes in. You can even get shampoo in bulk!

*It's time to stop single use.* I don't want a planet covered in plastic. I don't want to participate in a throw-away world.

Please consider challenging yourself to one month free of single use. You'll be doing something great for the environment, and for your mind. I look forward to our community being less wasteful because you cared enough to try.

Shine on you amazing Missoulians, and thanks for the work so many of you do to make our community the beautiful place that it is.

**Peace and Progress,  
Blake Nicolazzo  
SBC Board Member  
Founder, Bonfire Branding & Communications**



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# A hierarchy of

Reusable food and beverage containers are becoming more common, and this trend will certainly continue. For example, the [Good Food Store](#) and UM Dining both sell reusable durable plastic clamshells for take-out food. Each time you bring your container back, they'll give you a freshly-sanitized replacement that you can fill up with your next tasty meal. Other restaurants could easily join this effort and eventually make single use food containers passé in the Garden City.

In the meantime, single use containers are likely to be found around town, maybe every time you turn around! So you might as well know the scoop on each type.

## Do your part!

Ask for choices at the top of the list. Consider switching restaurants or kiosks if they aren't willing to hear your concerns. Many Missoula food businesses have good intentions but incorrectly believe that the City-County Health Department requires single use food containers for events and take-out. Be sure to let them know (nicely) that this matters to you. Customers have power, but only when you speak up!

*"Sit beside a mountain stream, see her waters rise;  
listen to the pretty sound of music as she flies."*

*- The Beatles*

**TRUE TO THE COMMUNITY, TRUE TO THE MUSIC.**

Celebrating 10 years.



# single use

BEST

## Paper and Aluminum

Napkins, paper cups, and paper-based food containers break down more readily than any other reusables. Some of these products break down faster than others. Clean paper, such as cups used for water, may be collected and sold as a recyclable commodity. Be sure that there's no plastic or metal embedded in the paper, though, because that layering makes it impossible to compost or recover materials. Aluminum is readily recyclable with a steady market. Soiled paper products can usually be added directly to any composting operation, but aluminum foil with food bits attached becomes a health hazard for recycling center workers once it starts rotting.

## Compostable Plastic and Wood

Wood and plastic containers marked "compostable" will break down eventually. They are designed to decompose quickly in commercial composting facilities that reach high temperatures. Unfortunately, Missoula isn't likely to get such a facility anytime soon. If you put most of these plastics in your home compost bin, they'll be there for at least a couple of years. They may be made from organic materials (likely GMO corn), but they won't break down in the Missoula landfill. Instead, they'll turn to methane.

## Plastics

Number 1 & 2 plastics have steady markets as recycled commodities. But they need to be sorted, be mostly free of food residues, and have their caps removed. Otherwise, the whole bin has to be sent to the landfill--it would take a long, tedious process for workers to sort and clean a big bin of plastic! Plastics #3-7 have unstable markets that make them harder to sell as commodities. Recycling centers that take these plastics sometimes have to store them for a long time, or even take a loss when selling them.

## "Styrofoam" or foamed polystyrene

Expanded polystyrene (EPS) is one of the most common forms of plastic used for food packaging. It often looks like tiny white foam balls glued together (think of a cheap cooler or packing peanuts). It can also look thinner and only slightly puffed, like many single use hot beverage cups. Unfortunately, EPS isn't recyclable (even if it has a recycling symbol on it), and it doesn't biodegrade for hundreds of years. It does, however, break into smaller and smaller bits, most of which find their way to the ocean where they float suspended and threaten birds and marine life who die after swallowing significant quantities. "Styrofoam" is actually a misnomer—it is Dow Chemical's brand name for polystyrene used in building materials and craft products.

WORST



Bob Burns  
Market President



Faye Hanson Warren  
Senior Vice President

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# IN SEARCH OF COOLER TIMES



KETTLEHOUSE.COM

# HOW TO OPT-OUT OF JUNK MAIL

**1. Register for the Direct Marketing Association's Mail Preference Service**, which represents about 80% of the marketing mail in the US: It's free to register online at [www.DMAchoice.org](http://www.DMAchoice.org).

To register by mail, send your name, address, signature and a check or money order for \$1 payable to DMA to:

**DMA Mail Preference Service  
P.O. Box 643,  
Carmel NY 10512.**

You should notice a decrease in junk mail after about three months. You'll need to re-register every three years to stay off of DMA's mailing lists.

**2. Opt-out of pre-screened credit offers** at [www.optoutprescreen.com](http://www.optoutprescreen.com), or call 888-5OPTOUT.

**3. Opt-out of individual company mailing lists** by contacting their customer service department.

- Ask them to remove you from their list AND from lists sold to other companies
- Avoid giving contact information online; many websites will sell or share it with "affiliates."
- Avoid sending warranty registration cards. They are not necessary for warranties to be valid (though they may be helpful in case of a safety recall).

*We all know we shouldn't throw the baby out with the bathwater. Cutting back on food service-related waste is a good idea that can be achieved as long as food safety practices remain in place.*

*Cooling and reheating foods may be a way to extend the life of leftovers, but it could also mean starting new life in the form of bacteria if it is not done safely. With the knowledge of safe methods and temperatures, restaurants can avoid discarding food due to safety concerns and focus on other aspects of their operation, like their hard goods, dinnerware, utensils, cups, etc.*

*Switching from disposable forms of service ware can obviously save on waste production. Most restaurants already do that and in fact "reusable" has long been the standard. The drink glass is refilled during a meal, and then it is washed, rinsed, and sanitized before the next customer is served. This is what we expect when we go out to eat. Surely a restaurant could conserve water, soap, cleaning chemicals, and money by foregoing this process and re-serving food on soiled plates. But the benefits do not outweigh the potential cost in the form of a life-threatening foodborne illness, the restaurant's reputation, or for that matter, a potential lawsuit.*

*Finding that balance between waste reduction and food safety is often a group effort involving the interests of the public, the restaurant owner, and the health experts. As health inspectors, we can help businesses optimize their operation while keeping food safety a priority.*

*Here are some examples of how consumers, restaurants, and local health officials can partner to reduce waste:*

**Enroll in a food safety course or request on-site training (for restaurants):** *Mastering safe food cooling, reheating, and storage techniques can prevent food waste.*

**Switch from disposable to non-disposable goods:** *There are no health codes that require disposable goods, but there are safety requirements for non-disposables (they must be washed, rinsed, and sanitized between customers).*

**Reuse the reusable:** *Either for your morning coffee fix or your weekend growler fill, customer-owned reusables are allowed as long as the person doing the filling does it in a way that keeps germs from being passed on to every other customer in line.*

**Reusable take-away:** *Reusable buckets for popcorn and other reusable containers are already being used in Missoula establishments. As long as the food container is completely cleaned and sanitized before giving the container to another customer, it is good to go!*

*If eateries can reduce, reuse, and recycle while not rejecting and replacing basic food safety practices, we can all rejoice!*

**By Todd Seib, PhD**

[Click here](#) for a more detailed letter from Todd describing required practices.



# Packaging matters

Whether it's a single use food container, an individually-wrapped dishwasher detergent pellet, or a new technology toy padded in layers of foam with a dozen little bags containing parts and pieces, packaging adds up! At any scale, cutting down on packaging is likely to save money, sometimes lots of it.

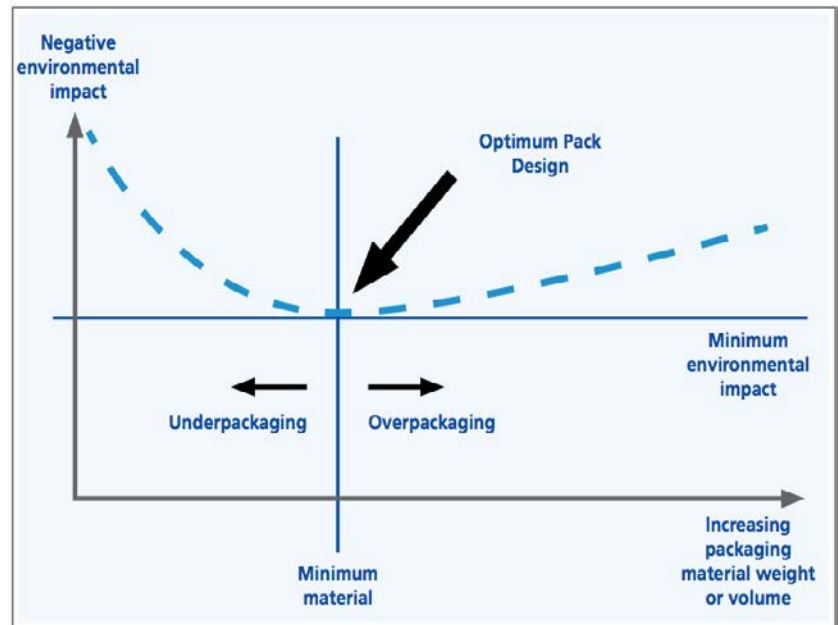
Global companies have led the way to help change packaging expectations for consumers and businesses alike. Wal-Mart has announced a goal to be “packaging neutral” globally by 2025. In other words, it plans to recover (through recycling, reusing, or composting) at least much material as the packaging that flows through its stores to consumers.

In 2006, WalMart began rewarding its suppliers for removing unneeded wrappings and shrinking package sizes. Previously it had become standard practice to partially fill cereal boxes and add as much as 2/3 of the volume of laundry detergent as filler to give consumers the impression of a more substantial product. Some of these changes have met with consumer resistance, but over time we are all gradually learning to live with less packaging. In Europe, for example, customers typically leave packaging at the store and only take home their new devices.

Locally, Kettlehouse Brewing took the lead in 2006 by becoming the first modern Montana brewery to package beer in cans. In general, reducing the weight and volume of packaging materials is more important for the environment than using recycled materials because of the carbon footprint involved in shipping. Compared to bottling, canned beer does both.

Businesses can ask suppliers to ship with less packaging, or to take back packaging. A note to a regional manager is in order when packaging is excessive. Do what you can to reuse internally. For example, Missoula's Posh Chocolat keeps costs down by reusing bubble wrap.

Try saving yourself the trouble of recycling next time you buy something that comes in layers of plastic and cardboard by leaving it at the store or sending it back to the supplier you bought it from. Almost every big box store now bales these items in big compressed bundles that get shipped off for reuse, earning an additional revenue stream in the process. It's good corporate citizenship, and it's good business sense—they get money for those bales because the circular economy is the economy of the future.



*Optimal packaging minimizes the total impact of both the packaging itself and product losses due to under-packaging. Source: "A Global Language for Packaging and Sustainability," **Global Packaging Project**.*

## “Smart Size Packaging” at Staples

Staples may not be the biggest box store, but it is the third largest e-commerce platform in the world after Amazon and Apple. How can that be? Its website ships massive quantities of goods to businesses, governments, and other organizational customers. That’s a lot of packaging!

Staples’ “Smart Size Packaging” cuts waste from distribution centers by making custom boxes for each order. An automated system adds the dimensions of each item in the order and creates one of 120 box options in real time to ship each order with minimal packaging. The system produces almost no waste. It uses 30-40% less material to make the boxes, reduces the “dunnage” or air pillows and other stuffing needed to protect package contents by 60%, and increases cube efficiency on trucks by 30%.



In addition, Staples is reassessing all product packaging to make it easier on the planet and easier to use. These calculator packages replace PVC plastic with recyclable paperboard made from 65% post-consumer content. Customer feedback suggests that no one enjoys the task of opening 20 PVC clamshells like the ones shown on the left! The company is considering doing away with packaging entirely when more than one of an item is ordered.

**Mark Buckley, VP of Environmental Affairs for Staples, told an embarrassing story in his talk for the SBC community at the UM School of Business Administration in March 2015:**

*One of Staples’ customers, a global environmental non-profit organization, had ordered 24 waste baskets and 24 recycling bins from Staples. However, 27 separate boxes were used to ship them! Each recycling bin was in its own box. Staples received a photograph of these 27 boxes, helping to nudge the company toward a better solution.*

### WHY AVOID “STYROFOAM” OR EXPANDED POLYSTYRENE (EPS)

Each year Americans throw away 25,000,000,000 EPS cups, according to the EPA.

- An EPS cup has a useful life that can be measured in minutes or hours, but it will be sitting in a landfill for many decades at least and perhaps for hundreds of years.
- Some studies suggest that styrene may be linked to increased risks of leukemia and lymphoma.
- In the natural environment, EPS breaks into small pieces that are ingested by wildlife.
- Even if it is marked with a recycling symbol, EPS is not currently recyclable.

Unless you plan on passing down your EPS cups, plates, and containers to your descendants, just avoid the toxic, ever lasting product.

### PLASTIC BAG BANS: JUMPING ON THE BAN-WAGON?

Plastic bags can choke wildlife, increase demand for oil, jam recycling machinery, and they never breakdown in landfills or oceans.

Chicago and many other cities across the nation have banned plastic bags (see a list [here](#)). The State of California passed legislation in 2014 to ban the bag statewide, but implementation has stalled due to political opposition.

A new Facebook group called [Ban the Bag Missoula](#) hopes to not only ban plastic bags but also implement a tax on paper bag use. The page encourages use of locally made reusable bags instead.

# How can reducing upstream waste save **money & resources?**

Most waste prevention happens upstream, before a product is even produced or used. Becoming proactive and reducing upstream waste means taking a closer look at where waste begins and understanding how and why it is generated. Like preventing sickness with nutrition and exercise, reducing waste upstream tackles the source. Stop waste before it starts.

The U.S. National Academy of Engineering reports that a whopping 93% of materials bought and used by companies never end up in the final product for sale. Opportunities for waste reduction in materials sourced are plentiful and will save your organization money.



**USE LESS,  
SPEND LESS,  
AND WASTE LESS.  
DO MORE WITH LESS.**

*Image courtesy of Flickr - USFWS Mountain-Prairie*

**Redesign your product or services** to reduce the amount of material used and increase the percentage of recycled content purchased. For example, Anheuser-Busch's telecommunications department went digital with the company's employee phone directory, avoiding 10.3 tons of paper waste and saving almost \$140, 000. Even small offices can save money by setting printers to double-sided default settings. Be sure to make it fun with prizes for workers who learn to adapt quickly!

**Reuse existing products** to cut costs and prevent waste. Product take-back helps to create a closed-looped system, reclaiming resources from returned products. For example, SBC member Pink Grizzly takes plastic pots back from nursery customers. Another SBC member, Bayern Brewing buys back 6-pack holders and beer bottles (see case study on page 62). The company aims to keep as much of the brewery's packaging out of the landfill as possible.

**Rethink your production.** Even digital waste takes resources to maintain. Do you have unnecessary inventory gathering dust on your shelves, inching closer to its expiration date? Overproduction and unused, unnecessary inventory are two of the top waste inefficiencies hidden in many businesses. Creating effective and efficient production, IT, and inventory systems will insure that your money is going towards profit and not waste management.

The first step for many businesses is to conduct a waste audit to identify areas of excess. Reducing waste upstream is manageable and profitable. It just takes smarts, a bit of a commitment, and exploring options beyond recycling.



# 10 EASY WAYS TO REDUCE WASTE IN YOUR OFFICE

REDUCE | 17

1. **Create a culture of transparency.** Provide data on waste generated and emphasize that employee participation is crucial to the success of the organization's waste reduction efforts.
2. **Develop recognition systems** to build workplace pride in waste reduction practices. Visibly reward your office champions. They are your waste warriors!
3. **Convert to electronic communications** for invoices, bills, and copies. According to the EPA, the average office worker uses 10,000 sheets of copy paper each year. If a printed copy is necessary, make sure to use recycled paper, that the waste is properly sorted and recycled, and don't forget to proofread!
4. **Use durable cups and serveware** for workplace events and daily food and beverage.
5. **Switch to reusable supplies** such as refillable printer cartridges, rechargeable batteries, and reusable air filters.
6. **Buy in bulk.** Order products with minimal packaging. Ask suppliers if they will take back packaging, or if options are available with less packaging.
7. **Replace cardboard boxes with durable, reusable boxes** for shipment to branch offices, stores, and warehouses. Return, reuse, and repair wooden pallets.
8. **Purchase used, refurbished items** including office furniture and equipment.
9. **Integrate training** on waste reduction into existing training programs. Provide examples and explain how it differs from recycling.
10. **Educate and involve your customers** about your mission to reduce waste. Build brand value and customer loyalty by walking your talk.



Image courtesy of Flickr - Images Money

## 9,000 TONS

By shopping, donating, and deconstructing, Home ReSource customers have reused more than 9,000 TONS of building materials since we opened our doors in 2003.

That's 9,000 TONS closer to Zero Waste, creating over 25 local green jobs every year.

Open 7 days a week



Reuse More. Waste Less.

# Home ReSource

1515 Wyoming St | [www.homeresource.org](http://www.homeresource.org)

# TZW Calendar of Events

## Monday, April 6th

### Recycle Paper for Peace with JRPC

Come wet your whistle, bring your old magazines and join us to make paper-folded peace cranes for a future JRPC event!

12:00pm-8:00pm

Montgomery Distillery, 120 W Front St.

## Wednesday, April 8th

### Live Like There is No Tomorrow

Join Liz Rantz, MD in a four week presentation about ways to live fully, sustainably and economically.

3:00pm-4:30pm

Peace Center, 519 S Higgins Ave.

**RECURRING EVENT: 4/15, 4/22, 4/29**

## Friday, April 10th

### Wastewater Treatment Facility Tour

Take a tour and learn more about the wastewater treatment methods used to treat millions of gallons of water prior to reintroducing it to the Clark Fork River.

2:00pm-3:00pm

Wastewater Facility, 1100 Clark Fork Ln.

### Tour Missoula's Hybrid Poplar Plantation

After touring Missoula's Wastewater Treatment Facility, come check out the Poplar Plantation, Missoula's tertiary wastewater treatment option via hybrid poplar trees.

3:00pm-4:00pm

Poplar Plantation, 1100 Clark Fork Ln.

## Tuesday, April 14th

### MDA Member Luncheon

The SBC is hosting this month's MDA luncheon! Please RSVP at [www.missouladowntown.com/rsvp](http://www.missouladowntown.com/rsvp)

11:30am-1:00pm

The Loft of Missoula, 119 W Main St.

## Wednesday, April 15th

### MDA Coffee Talk

Join the SBC and Energetechs for coffee, a light breakfast, and networking!

8:00am-9:00am

Energetechs, 615 Oak St.

## Thursday, April 16th

### 10 Tips to Zero Waste your Business

Join Home ReSource to learn how to save money, improve sustainability, and green your business. Please RSVP to [Jeremy@homeresource.org](mailto:Jeremy@homeresource.org) by April 14th.

4:30pm-6:00pm

Home ReSource, 1515 Wyoming St.

## Friday, April 17th

### Green Ribbon Book Sale for the SBC

Come down to GRB for a fundraising book sale to benefit the SBC! Donate books at MFCU branches or GRB through 4/17.

10:00am-6:00pm

Green Ribbon Books, 829 S Higgins

**2-DAY EVENT: 4/17 & 4/18**

## Saturday, April 18th

### Clark Fork River Cleanup

Join Clark Fork Coalition to help clean the banks of the Clark Fork and enjoy a free BBQ afterward!

10:00am-12:00pm

Caras Park Pavilion

### Good Food Store Earth Day 2015

Stop by the Good Food Store on Earth Day for a chance to win a CSA, tree seedlings, and ECO Takeout containers!

11:00am-3:00pm

Good Food Store, 1600 S 3rd St. W

### Saw Mill & Woodshop Tour

Bad Goat Forest Products will be giving a tour showing how they use by-products of forest restoration and urban forests.

3:00pm

Bad Goat, 1301 Scott St.

### Bike/Walk/Bus to Missoula ZooGrass

Discounts at the door for using alternative transportation!

5:00pm

Stage 112, 112 N Pattee St.

## Monday, April 20th

### Sustainable Beauty at Frolic

Frolic is holding an open house to introduce you to their favorite green product line, Davines (10% off), for Earth Week!

10:00am-6:00pm

Frolic, 443 Hill St.

**WEEK LONG EVENT: 4/20 to 4/24**

### Simple Fermentation Culinary Demo

Join UM Dining's Executive Chef, Patrick Browne, for a special demonstration.

12:00pm-1pm

UC Commor



Don't forget  
[www.MissoulaEvents.net](http://www.MissoulaEvents.net)  
for calendar updates, ne

## EARTH DAY Wednesday, April 22nd

### Alberton Earth Day Cleanup

Join the Alberton School Student Body for classroom talks, projects and a town-wide cleanup for Earth Day!

8:00am

Albertson School, 308 Railroad St., Alberton

### Earth Day & Customer Appreciation

Celebrate Earth Day with Republic Services Missoula Recycling Facility. We'll have tours of the Recycling Center at 11am & 1pm, plus food, kids games and more!

10:00am

Republic Services, 3207 W Broadway

### Earth Day SustainaGANZA

Join UM Student Groups and Missoula Community Groups for the second-annual SustainaGANZA. The Oval will be filled with games, food, music and more! Plus, UM Dining will be making ice cream from local milk using liquid nitrogen!

10:00am-3:00pm

University of Montana Oval (UC Ballroom if raining)

### Opportunity E-Cycling - Grand Opening

Please stop by and help us celebrate the Grand Opening of our new electronic recycling operation!

11:00am

Opportunity E-Cycling, 6900 Kestrel Dr

### Earth Day Ditch Clean Up

Join Ecology Project International staff, friends and family to pick up trash, recycle, and eat snacks!

2:00pm-5:00pm

Ecology Project International, 315 S. 4th St. E., Suite 101

### MFCU Shred Day

Bring up to two boxes of paper to be shredded and recycled at no charge!

4:00pm-6:00pm

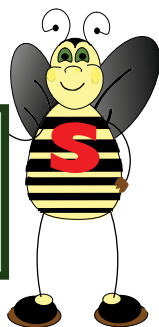
Missoula Federal Credit Union, 3600 Brooks St.

### MCAT's 25th Anniversary Open House

Missoula Community Access Television is turning 25 years old on Earth Day April 22. Join us for a celebratory open house!

4:00pm-8:00pm

MCAT, 500 N Higgins, Suite 105



t to visit  
[t/ZeroWasteMissoula](#)  
ew events, and more!

## Thursday, April 23rd

### KettleHouse Brewery Tour

Learn how the KettleHouse is moving toward zero waste. Private tasting to follow tour. Must be 21 or older, space limited to first 15 participants to RSVP by email to [anniew@kettlehouse.com](mailto:anniew@kettlehouse.com).

6:00pm

KettleHouse Northside, 313 N 1st St. W

### Clark Fork Symposium and Climate & Water Supply Outlook

Since 1985, Clark Fork Basin citizens have met every 5 years to focus on conservation science and actions in the basin.

4/23 – 10:00am-9:00pm & 4/24 – 8:30am-5:30pm

Go online to view schedule and locations.

**2-DAY EVENT: 4/23 & 4/24**

## Friday, April 24th

### Campus Farm Stand & Farmer's Market

The Corner Store will offer campus & locally grown greens, onions, mushrooms, artisan cheeses, and more! Stop on by!

10:00am-4:00pm

UM Corner Store

## Saturday, April 25th

### Build a Compost Bin for MUD

Join us to build a three-section compost bin for MUD using blueprints made by Garden City Harvest.

2:00pm-5:00pm

Home ReSource, 1515 Wyoming St.

### Saving Old Wood for Good - A Colorful Tour

Join Heritage Timber for beer, treats, and a tour of HT's lumberyard! Curiosity, questions, and kids welcome.

2:00pm

Heritage Timber, 27341 Blixit Creek Rd, Bonner

## Sunday, April 26th

### MUD's Earth Day Celebration & 5k Race

Join us at Caras Park for Missoula's 9th Annual Earth Day Celebration and 5K Race presented by Missoula Urban Demonstration Project (MUD).

12:00pm

Caras Park Pavilion

## Thursday, April 30th

### Home Building with Recycled Materials

Interested in home building with recycled materials? Tour a designer-renovated demonstration presented by Articulture - A Design Farm featuring Heritage Timber.

7:00pm

Rattlesnake Area, 4 Carriage Way

# Organizing a low-waste event is easier than you might think

Many cities, universities, and event venues have adopted policies to reduce event wastes. Any event, big or small, can use zero waste strategies and practices. For example, the River City Roots Festival provides recycling bins, reusable cups, AND a water refilling station. The key to successful zero waste events is in the planning. By prepping ahead of time, you can rethink your event to minimize waste upstream, preventing waste creation at its source.



Photos taken by Athena Photography

Whether you are planning your next staff meeting or a community-wide event, there are simple steps you can take to make a big difference. Watch a full Zero Waste Event Planning Webinar by the SBC and Home Resource [here](#), and see the powerpoint slides [here](#). [Click here](#) for a great PDF showing how a wide range of events can reduce waste and providing an easy waste tracking form.



Sorting through compostables after the 2014 Pittsburgh Marathon.

## IS A ZERO WASTE EVENT MORE EXPENSIVE?

The initial investment may seem more costly but if you look closer, there are a lot of savings to be found as well.

- Purchasing durable serveware and décor is an excellent investment that will reduce costs for future events. The feel and elegance of a real plate shows guests that you value their experience and the health of the planet.
- Marketing with electronic media saves paper, posters, ink and printing costs. E-registration, digital handouts, and incentives for guests to bring their own mugs and water bottles can educate while saving money.
- Collecting RSVPs in advance allows a precise estimate of food needed for the event. Food is often the biggest expense and the biggest opportunity to reduce waste.

# CASE STUDY: Sports venues

From NASCAR to the NCAA, “Teams and venues are discovering that it generally costs more to landfill than to recycle,” according to an NRDC Resource Specialist. For example:

- **Seattle Mariners:** \$150,000 composting operation paid for itself in less than 1 year.
- **Cleveland Indians:** Saved \$50,000/year by cutting waste by half from 2007 to 2009.
- **Portland Trail Blazers:** 90% diversion rate in 2013, up from 38% in 2007.
- **Ohio State:** 87% diversion rate in 2012; 98.2% at one game.

Cost savings often come from looking at waste differently. For example, one venue had been routinely providing three different dipping sauces with every order of chicken fingers. A waste audit revealed that most customers only used one of the three sauces. Now each customer is asked for their preference, saving \$1.50 per customer on condiments and “ramekins” or mini sauce containers, in addition to reducing landfill costs.

## “The only water we waste is sweat.”

– a sign in the men’s room of the Philadelphia Eagles

Once a venue or league has reaped the easy gains from seeing things freshly, the next step is often attracting new sponsors. Many companies want to be associated with “green” leaders that routinely attract thousands of attendees. Ultimately, these new revenues are likely to far outweigh the initial cost savings.



SUSTAINABLY DESIGNED ...



Photo by Chris Chapman



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& LOCALLY OWNED



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# REDESIGN

## Biomimicry: Design inspired by nature

*Many thanks to Nicole Miller at Biomimicry 3.8 for providing this information.*

Biomimicry is a design process that consciously emulates nature's genius. Biomimics study nature to find solutions to human design challenges. For example, they have:

- created self-cooling buildings with "skin" inspired by cactus,
- designed the nose of a super-efficient bullet train after studying the form of a Kingfisher,
- produced water pollution source detectors that mimic lobsters,
- developed biodegradable fiber inspired by the CO2 conversion abilities of leaves,
- invented a non-toxic adhesive with a protein structure inspired by mussels, and
- identified cooperative business strategies by studying ecosystems.

Biomimicry began with a book written by the Stevensville-based author and biologist Janine Benyus in 1997, called *Biomimicry: Innovation Inspired by Nature*. Since then, the Montana-based company, called Biomimicry 3.8, has had significant global impact on the design of products, processes, and even entire cities. They have worked with companies like Nike, Boeing, P&G, GE, Kohler, Levi's, and Burt's Bees.

### NATURE IS THE ORIGINAL CIRCULAR ECONOMY

A fallen log doesn't immediately become a tree, it becomes bacteria, invertebrates, and fungi. Materials are disassembled on site, and pulled out in a particular way. Enzymes break down organisms within other organisms. The fungus grows. The mouse eats the mushroom. Then a vole (or a mole) comes along and gets upcycled into a hawk. Nature designs small steps with multiple intermediaries so that materials circle endlessly, in many forms and variations.

Why is the company called Biomimicry 3.8? Because there have been 3.8 billion years of life on Earth, 3.8 billion years of evolutionary testing, and thus 3.8 billion years of free R&D available to be tapped. When comparing the human patent database with nature's solutions, there is only a 12% overlap in common solutions. That means a HUGE opportunity to borrow from the other 88% of nature's proven solutions. One research team estimates that biomimicry's annual market impact will be \$300 billion in the US and \$1 trillion globally by 2025.

Among the many benefits of biomimicry is that it eliminates waste by designing for optimal use of resources and eliminating redundancies. One current project addresses the challenge of cellulose, the main ingredient in paper, which has a very short lifespan. Paper gets downcycled each time it is recycled because the fibers get shorter and become less and less valuable. A biomimicry group in Sweden is looking at ways to reassemble these short fibers to make them longer. Through this process, they've identified mechanisms in nature that might eventually inspire stronger paper and waterproof paper in addition to infinitely recyclable paper. As companies get better at emulating nature, "waste" can become obsolete.



## Deconstruction & Reclaimed Wood Since 1994

Join us on APRIL 25 at 2 pm for a [Colorful Lumberyard Tour](#). Demystify copper balls, purple glass and mortise pockets. Free and for the whole family.

Get WOWed April 30 at 7 pm by seeing our materials showcased by the talented designer Karen Slobod at her remodeled [Articulture home](#) at 4 Carriage Way.



We've saved 3 million feet of wood & 350 tons of metal from the landfill.

Locally Reclaimed Timber, Lumber, Siding and Metal that bring *Beauty, History and Sustainability* to you.



[www.HeritageTimberMT.com](http://www.HeritageTimberMT.com)  
406.630.3966

Reclaiming up to 99% of a building, we even reuse nails & compost splinters.

## CASE STUDY: Biomimicry & packaging design

Natura is Brazil's largest cosmetics company, with annual revenue over \$3 billion. Experts from Biomimicry 3.8 worked with a cross-functional team at Natura to identify 12 unique packaging challenges. Then they zoomed in on the question, "How does Nature contain liquids?"

The Biomimicry 3.8 research team compiled an initial report describing 30 different ways liquids are contained in nature. For each strategy, they provided an illustrative example, such as a bird's egg or the Giant African Land Snail. Eventually this led to a second report capturing 17 proposals for packaging and 8 proposals for new products.



For more information, see the article that Natura published on the research and design process in [WIT Transactions on Ecology and the Environment](#).



# ReStore®

A Habitat ReStore sells new and gently-used home improvement goods, furniture, building materials and appliances to the public at a fraction of the retail price. The proceeds are used to fund Habitat for Humanity of Missoula's affordable home-ownership program, ensure people have access to affordable materials to maintain and improve their homes and to divert usable materials from the landfills.

## Volunteer

The ReStore is staffed by volunteers and just a few hours a week helps our organization. Volunteers are needed to stock, clean, price and repair donated items. In addition, drives for donation delivery and pick-up are always needed. Habitat has additional volunteer opportunities on our build site, committees and office. Please contact volunteer coordinator Frankie Feinstein to start volunteering today!



## ReStore and Donation Drop Off:

3655 MT Highway 200 East

East Missoula

406-549-8215

Wed - Sat 10am - 4pm

[www.habitatmtla.org](http://www.habitatmtla.org)

## Shop at the ReStore

Items typically available in the ReStore include:

- Windows & Doors
- Cabinets •
- Light fixtures & ceiling fans •
- Paint •
- Plumbing supplies •
- Sinks, tubs, showers & toilets •
- Floor coverings •
- Appliances •
- Countertops •
- Furniture
- Tools and much more!

In-stock items change frequently so stop by often and browse our selection!



## Donate Shop Volunteer



# FOUR PRINCIPLES FOR A NATURE-INSPIRED ZERO WASTE PROGRAM

**1. Source simply.** Nature sources simply and safely from a small subset of the periodic table.

**2. Assemble reversibly.** The building blocks in nature are connected with weak bonds that can easily release resources.

**3. Recover the precious.** Orange and yellow leaves are a sign that a tree is recovering chlorophyll before it lets them go.

**4. Upcycle the leftovers.** Every organism reincarnates waste as part of an endless upcycling chain. Nothing is left on the cutting room floor.

These four principles can be used to guide the redesign of your organization to emulate nature. They don't focus only on waste because you can't solve the problem just by looking at waste. But they do show how to close the loop and eliminate "waste."

What are you doing in your company to source simply? To make resources easy to recover? What is your precious chlorophyll? How can your "waste" contribute to an endlessly looping supply chain?

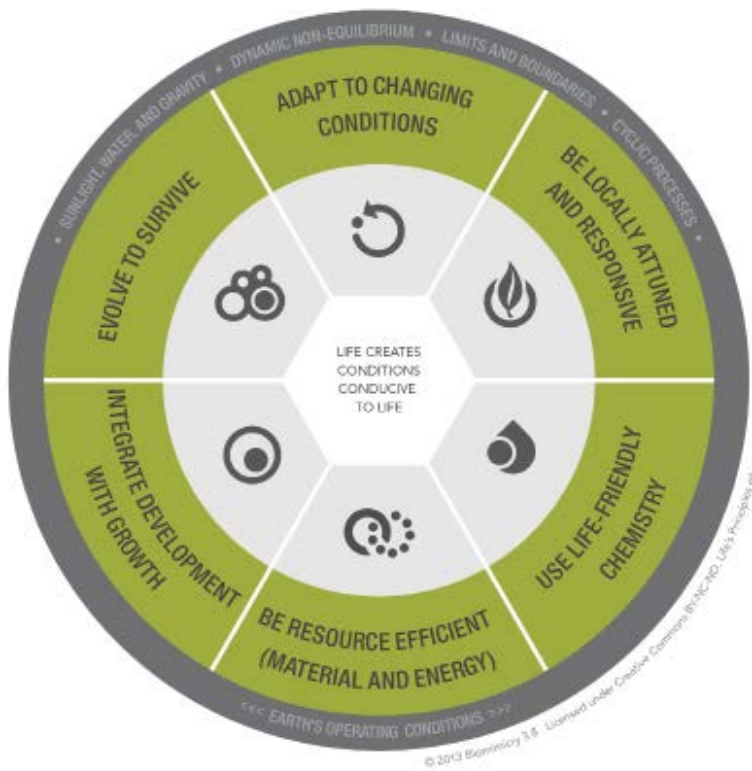
## ESSENTIAL ELEMENTS OF THE BIOMIMICRY DESIGNLENS

The practice of biomimicry embodies three interconnected, but unique ingredients:

**1. Ethos** represents respect for, responsibility to, and gratitude for our fellow species and our home.

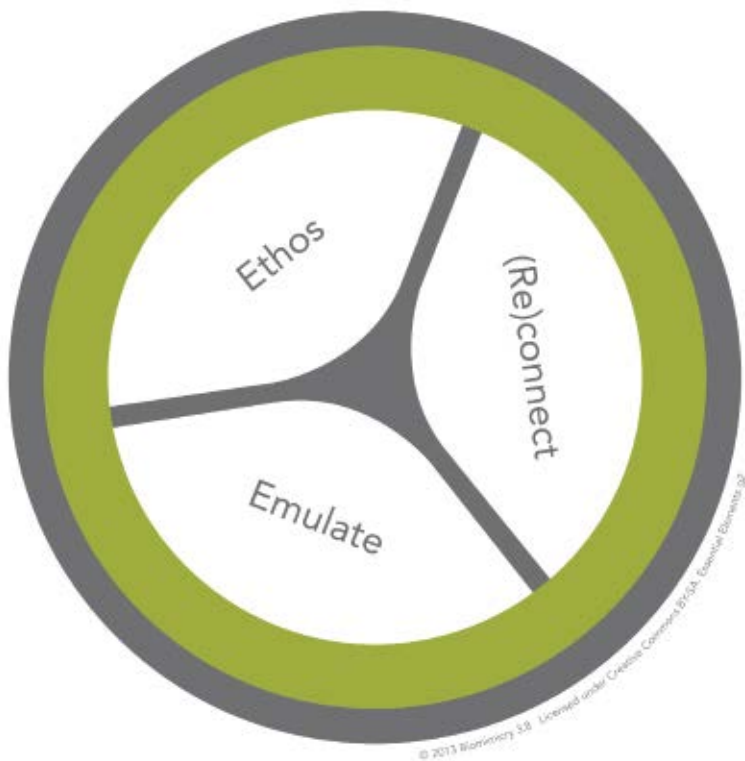
**2. (Re)connection** reinforces the understanding that, while seemingly "separate," people and nature are actually deeply intertwined. We are nature.

**3. Emulation** is about being proactive in achieving the vision of humans fitting in sustainably on earth.



### LIFE'S PRINCIPLES Biomimicry DesignLens

Biomimicry.net | AskNature.org



### ESSENTIAL ELEMENTS Biomimicry DesignLens

Biomimicry.net | AskNature.org

A rustic interior scene, possibly a cafe or a home, featuring a wooden table with a vase of red flowers and a person pushing a cart. The scene is overlaid with a semi-transparent white banner containing the text "Life. We're in it together."

# Life. We're in it together.

Do you have a project for your home or business which would help move you toward a more sustainable, zero waste? We'd love to chat with you about financing your green project.

We offer great rates on home equity loans, business loans and more. Stop by any of our branches today or give us a call at 523-3300. *All loans subject to approval.*



Missoula Federal  
Credit Union

ive you towards  
ject.

top by any

**FREE SHRED DAY!**

**Earth Day, April 22 at 4 - 6 PM**  
**3500 Brooks Street**

Bring up to two full standard document boxes  
Standard materials will be shredded.  
(Cars, no businesses.)



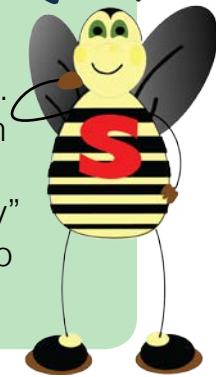
# Waste, money, and the business case for redesign

Redesign may be the most pivotal “R” in Moving Toward Zero Waste. Dozens of organizations in this Guide have cut costs and increased revenues after looking with fresh eyes to redesign “waste as usual.” The most dramatic successes come with a shift in thinking to seeing waste as a measure of inefficiency. This shift allows waste reduction opportunities to be measured and managed, improving the bottom line as well as social and environmental performance.

## \$100 MILLION AVAILABLE TO INCREASE U.S. RECYCLING RATES

A group of large firms have established a “[Closed Loop Fund](#)” designed to lend \$100 million at zero interest to North American cities to increase recycling rates. According to the Fund’s website, the “problem” is that US cities spend too much money sending recyclables to landfills. The “potential” is that billions of dollars can be earned by selling those recyclables in the marketplace. The “opportunity” is to create thousands of jobs and reduce greenhouse gas emissions. Sound too good to be true? Check it out!

\$100 million?  
That’s a lot!



## Redesigning waste creates jobs

According to the EPA, recycling is good for the economy. “If you divert one ton of waste from landfills, it pays \$101 more than if it were just managed as waste,” said Mathy Stanislaus of the EPA’s Office of Solid Waste and Emergency Response. “There’s a delta of increase in salary and wages. And with that same diversion, sales go up \$135.” Zero waste “is a goal we want to strive for,” says Stanislaus. “If waste goes to landfills, it means we’re not doing a good job of managing it” ([Knowledge@Wharton](#)).

Studies show that moving toward zero waste creates jobs, and lots of them. For example, the [Tellus Institute](#) found that achieving a 75% diversion rate for municipal solid waste and construction and demolition debris by 2030 would produce 1.1 million more jobs than a “business as usual” scenario. In addition, many jobs would be created indirectly.

Another [study by ILSR](#) found that per ton of materials:

- Sorting and processing recyclables create 10 times as many jobs as landfills or incineration,
- Manufacturing new products from recycled materials creates 26 times as many jobs,
- Reusing textiles creates 85 times as many jobs, and
- Reusing computers creates 296 times as many jobs as landfills or incineration. Reusing materials also requires higher skill levels, which increases the economic benefits of those new jobs.

Still not convinced? [Here](#) are 10 fact sheets highlighting the economic benefits of waste.

# Business redesign case studies

According to Einstein, “a new type of thinking is essential if mankind is to survive and move to higher levels.” The firms described in these case studies vary widely in scale, from Missoula’s Spirit At Play to the global Staples. They include nimble startups and leading incumbents. Each demonstrates a knack for seeing possibilities where others see none. These are highly innovative businesses that are capitalizing on waste as a resource. How can you borrow the thinking of pioneers to see your opportunities differently?

## TerraCycle

TerraCycle a company with a goal of “eliminating the idea of waste,” is known for finding ways to use difficult-to-recycle items such as cigarette butts...

## Rubicon Global

Rubicon Global operates a virtual marketplace that realigns incentives in the waste industry. Rather than earning profits from waste, Rubicon earns more for diverting more waste...

## Automakers

Perhaps surprisingly, a number of auto plants now produce zero waste, or close to it, savings millions of dollars...

## Staples

The 3rd largest e-commerce company did a comprehensive environmental audit and now their entire business model has become focused on closing the loop...

## Spirit At Play

Even very small businesses can capitalize on waste as a resource. Spirit At Play saved money immediately and the savings kept increasing...

[Click here to read these case studies!](#)

## DIRECT COSTS OF WASTE

The cost of materials purchased but later tossed is 60% of the full cost of waste for the average production business, according to the UN document *Environmental Management Accounting Procedures and Principles*. Next on the price list at 20% is the cost of processing material that is later wasted, including labor. The remaining 20% is spent on waste disposal (including storage, haulage and tipping fees) and waste prevention and environmental management (environmental assessments, and audits).

## EXTENDED PRODUCER RESPONSIBILITY (EPR)

Originating in Europe in 1990, EPR is an environmental protection strategy that makes product manufacturers responsible for the full life-cycle of the products they produce, including take-back, recycling, and disposal. EPR laws are common in Europe. For example, Germany’s “[Green Dot](#)” program requires companies to pay for the costs of recycling the packaging sold with their products. About two-thirds of US states have at least one [EPR law](#) on the books, and many firms are preparing for EPR to become standard worldwide.



Spirit At Play

# How to redesign toward zero waste:

## Conducting a waste audit

Waste inefficiencies can sprout up between the cracks of any business. Only after you find the waste-- and its sources and where it easily accumulates--can you really create a strong waste reduction program.

By conducting a baseline waste audit, your organization will begin to understand how and where waste is generated during daily business operations. An audit can help you to assess the effectiveness of current waste reduction and recycling programs, and provide insight into employee knowledge and behaviors that are often pivotal for reducing wastes.

Records examinations, waste walk arounds, and waste sorts are three common approaches to conducting a waste audit. Depending on size and type of facility, the complexity of your waste stream, and resources available, your waste audit may require just one approach or all three to determine your waste reduction needs and opportunities.

### 1. Records examination

Reviewing your organization's records enables you to estimate annual waste generated and the costs of collection, removal and disposal. First, identify waste collection labor costs and waste container costs. Determine (if you can) the volume of waste generated. Identify major points of waste origin and find the most expensive waste components. What is the cost of renting waste containers or dumpsters per week? Does (or can) your organization receive revenues from recyclables? Document the financial benefits of reuse and recycling practices and include how much is saved in avoided disposal costs.

This approach is the least time consuming but may not offer quantitative data about why and where waste is generated.

**Want help looking for recyclables in your waste stream?  
Republic Services of Montana offers waste audits for commercial customers.**



## 2. Waste walk around

Touring your organization's facility will help you observe specific practices that work and don't work. Go to each department and talk to employees and managers about waste-producing activities and equipment. These people are on the waste forefront and will disclose waste reduction opportunities that can't be found in records or paperwork. Moving through the facility, take note of the layout and operation of each department. What waste reduction efforts are being made currently? How does waste move through the organization? Observe the types and relative amounts of waste produced in each aspect of the business. A waste walk around will reveal information about major waste components and waste producing processes but may not provide specifics about what's in your trash.

## 3. Waste Sort

Getting down and dirty with your trash can be the most fun and useful part of a waste audit. Sorting through your waste provides quantitative data on waste generated and allows you see what your waste is comprised of.

Gather your green team or interested employees to help collect, sort and weigh a sample of your organization's waste. Samples can be taken from a specific waste stream or you can analyze waste from one randomly-selected business day or week. It can be helpful to use the same bags to separate and weigh waste during the audit.

The more trash sorted the more accurate the representation. Identify each waste component. Common waste components include paper (office and cardboard), plastic, metal, glass, and organic waste such as food scraps. Ideally, each component will be separated and measured. Once data are collected, determine which materials can be substituted, reused, or recycled.

Use a Waste Sort Worksheet such as one of the following to record your data:

- [EPA Solid Waste Audit Form](#)
- Keep America Beautiful's Guide for Auditing [Waste in the Workplace](#)
- Small Business [Waste Audit Mobile App](#) (from Australia)
- [Classroom or School Waste Audit Form](#)
- [Household Waste Audit Worksheet](#)

Whether you just examine records or complete all three approaches, a waste audit is the first step towards moving your organization towards zero waste.

[Click here for a waste sort checklist.](#)



Image from Food Prints DC

# Case Study:

## Waste at St. Patrick's Hospital

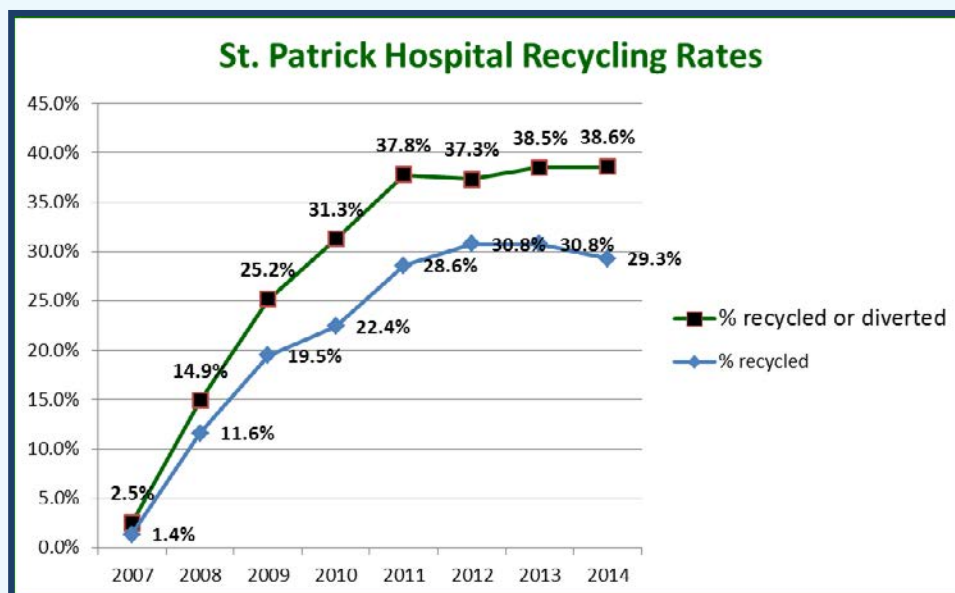
By Beth Schenk, PhD, MHI, RN, Nurse Scientist & Sustainability Coordinator, Providence St. Patrick Hospital

Healthcare produces a tremendous amount of waste. A conservative estimate is that 33 pounds of waste are produced for every day a patient stays in the hospital. The largest producers of waste are procedural areas such as operating rooms and cath labs, though all functions of the hospital contribute waste, from administration to food production.

Providence St. Patrick Hospital has been working to reduce waste for a number of years. This is done first by carefully segregating the waste so that none is “over-treated.” In other words, the waste that goes in the infectious waste bins needs to be truly what is defined by law as “infectious.” It’s very expensive to treat newspapers or coffee cups as infectious waste. This applies to recycling waste as well. Staff members need to separate recyclables and place them in the single stream recycling bins. In a busy workplace, this is sometimes challenging.

By working on this continuously, with a periodic “Waste Overhaul,” the helpful “Waste Shepherds” in every unit, reminders by the Green 4 Good Champions and the commitment of hundreds of staff members, St. Pat’s has drastically changed its waste profile. The hospital tracks the percentage of total waste recycled or diverted from the landfill. Recycled items contribute to materials that can be reused in other products. Diverted waste includes both reused and reduced items. Reused materials are whole items that are given away or reused internally. Reducing is a process that avoids waste in the first place, such as using reusable dishes rather than disposable. All of these categories are tracked.

Over recent years, St. Pat’s has increased both recycling and diversion significantly, adding up to over 38% of its total waste. Through these efforts, **the hospital recycles or safely diverts over a ton of potential waste every day.** This means St. Pat’s keeps over a ton out of the landfill every day, and instead, returns it to a productive stream of materials.



If St. Pat’s created the average amount of hospital waste, it would spend over **\$300,000 additional dollars on waste treatment each year.**



## WASTE TRACKING

Healthcare waste is complex. At St. Pat's, every category of waste is tracked throughout the year. This includes the following categories for total waste, recycled waste and diverted waste. Several of these are highly regulated and expensive to treat.

**Waste Types:** infectious, pharmaceutical, hazardous, nuclear, recyclable, landfill, construction, compostable, and anesthesia gas waste.

**Recycled:** Batteries, cardboard, single stream, construction, electronic, lamps, food, metals, motor oil, packaging, shredded paper, toner cartridges, x-ray film.

**Diverted:** Reusable dishes, reusable isolation gowns, medical supplies, pallets, scrubs, sharps containers, furniture, and equipment.

Many staff contribute to gathering the needed data to track the waste stream. Periodic audits are performed to evaluate accuracy of segregation and what additional education or reminders are needed.

## COST SAVINGS

If Providence St. Patrick Hospital didn't make this effort to reduce waste and to segregate waste properly, it would be creating more waste and more cost for treatment. National benchmarks for infectious waste, recycling waste and total waste are measured on a basis of pounds per "adjusted patient day." If St. Pat's created the average amount of hospital waste, it would spend over \$300,000 additional dollars on waste treatment each year.

By chipping away each year to reduce waste and treat all wasted materials responsibly, it saves money and streamlines processes. These waste reduction efforts pay off!

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# REUSE & REPAIR

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## Construction and demolition (C&D) debris

*By Jeremy Drake, Education Program Manager, Home ReSource*

In the United States, an estimated 40 percent of our total waste stream comes from putting up, fixing up, and tearing down buildings. This giant slice of the pie is called Construction and Demolition (C&D) debris and the EPA estimates that we generate 170 million tons of it per year. That is a LOT of concrete, wood, asphalt, gypsum, metal, brick, and plastic. It also includes items such as doors, windows, and plumbing fixtures that end up in landfills across the nation.

The State of Montana estimates C&D debris generated during demolition of a single-family house at 111 pounds per square foot of dwelling. That means tearing up one 10' by 8' room can leave behind one ton of debris! In fact, renovation and demolition projects account for a whopping 90 percent of C&D debris.

The good news is that most C&D debris can be reused or recycled. The most frequently recycled materials are concrete, asphalt, metals, and wood. However, low landfill disposal fees in Montana do not create an

incentive to recycle our state's C&D debris. Deconstruction, the art of dismantling buildings for maximum reuse of materials, is extremely effective at avoiding the amount of C&D debris that goes to waste. Deconstruction can result in reuse and recycling of 40-70 percent of the materials by weight.

Reducing waste by reusing and recycling materials from renovation and demolition projects conserves landfill space and reduces the environmental impact of producing new materials. Reuse and recycling creates jobs and can reduce overall project expenses through avoided purchase and disposal costs.

Activities like deconstruction create opportunities for conversation about sustainable building practices and can raise awareness about the benefits of reuse and recycling. Does anyone really want an excavator to knock down the house next door? Changing how we think and talk about C&D debris is fundamental to moving toward zero waste.



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- Mike Cordano, President of HGST

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- Today we have **BIG** data, but data is also the smallest distinct piece of information.
- **Data** answers questions, but data also creates questions that need answers.
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- **Business** uses data to connect with customers, vendors, partners, and the public in beneficial ways.
- **Many** business issues are resolved using data.

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# Case Study:

## A Missoula business renovation

**The following is a first-person account from an SBC member who recently renovated an existing building in Missoula to launch a new business.**

*“We fully intended to reuse as much of the building as possible and to use low-impact materials in the build-out. We weren’t aiming for LEED certification, just conscientious management.*

*The first indication of how complicated this would be was when **our general contractor actually got down on bended knee and begged me to not to “make them” work with Home ReSource!** He agreed to 5% change orders if we didn’t. We still had Home ReSource haul away a lot of reusable stuff, but we had to manage that ourselves.*

*The contractor, of course, was working on a deadline, so the crew wasted a lot of material in order to go faster. Half boxes of fittings – gone. Half sheets of drywall – gone. Lengths of hoses and pipe – gone. Perfectly decent 2x4s – out. Hunks of corrugated plastic – nope. Cardboard – not recycled. Half-full toxin containers – tossed. They could have covered the cost of another employee just to monitor and reclaim all they dumped.*

*We also had to meet County Health Department regulations, which required FRP, PVC, vinyl, lubricants, toluene, benzene, etc. Several times I had to prevent workers from simply dumping residue into my garden areas (which was apparently standard practice). It went into the parking lot drain instead – yuck! No one used protective gear.*

*Unfortunately, I don’t think using a different contractor would have made much difference. This is just business as usual in construction. Now we’ve turned our attention to providing our customers with a healthy (hopefully organic) product. But the back story of waste and chemicals will remain with us for years to come.”*

**CTA Architects designed this new visitor center at Old Faithful for the National Park Service, achieving 99.6% diversion in the deconstruction of the old building and construction of the new building.**



# Repairing, repurposing, renting, borrowing, and donating

One of the most obvious ways to keep stuff out of the landfill is to keep using it. Fortunately there are lots of ways to do that, and more are being invented all the time. Whether it's putting a perfectly good sofa out on the street with a sign that says "Free" or making your own 3-D printer filament from milk jugs in your garage, Missoula is a great place to close the loop.

## How to Repair or Repurpose

- **Home & Building:** Want to DIY? Home ReSource and Habitat for Humanity's new ReStore are two great places to start. Both offer workshops, and you can spend many happy hours discovering hidden treasures in their aisles.
- **Shoes & Boots:** There was a time when every town had at least one shoe repair shop. We've got several, and you can even get your boots resoled or repaired at Hide & Sole or the Trailhead.
- **Bicycles:** Free Cycles is a Missoula nonprofit that teaches people how to repair bicycles. They also fix and recycle bikes, make bike trailers and other innovations, and freely share thousands of accumulated parts that you can use to fix (or fix up) your bike. You can even assemble a whole bike from parts! Not to be confused with freecycle.org, which allows people to give and receive items for free.
- **Clothing:** The "Do or Donate" program of the Smith Company Design Studio invites customers to clear out their closets. A contemporary makeover of a wedding dress or other wardrobe favorite may cost one-third the price of buying new.
- **Computers:** First Call Computer Solutions is just one of many places that will repair your computer (and the only one that is a member of the SBC!).
- **Art:** Almost anything can be made into something beautiful. Upcycled is a little shop that only sells repurposed art and craft.

## How to rent or borrow

- MUD's Tool Library can save you beaucoup bucks on everything from a table saw to a cider press. Need a leaf blower? A ladder? How about a cement mixer? They even have a truck to share. Do you really want to own these things, or just use them occasionally?
- Eastgate Rentals is one of several Missoula rental shops with a wide selection. Bike shops, outdoor stores, and hardware stores are among many local businesses that rent or lend equipment.
- Don't forget the Missoula Public Library! It is also home to the Missoula Seed Library, where you can "check out" seeds, and bring back new ones at the end of your gardening season.

## How to donate

- Missoula's plethora of thrift stores would easily fill this entire Guide! Love them up with whatever you're tired of storing, but do them a favor and keep it clean, okay?
- See the Missoula Reuse Map for more local places to donate items for reuse.

This list is clearly just the tip of the iceberg.

**Go forth, Missoulians, and repurpose everything you can.**

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# Moving Missoula Toward Zero Waste



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## Moving Missoula **TOWARD ZERO WASTE**



# Case Study: Donation Warehouse

Donation Warehouse started as nearly a zero waste business. “The first two years we were in business, we didn’t have a dumpster,” said co-founder Laci Rathburn (a former SBC intern). “We tried to never generate more waste than could fit in our garbage can at home. Unfortunately we have since had to get a dumpster due to a large number of unsaleable donations being left at the store after hours.” This hasn’t stopped DW from becoming one of the coolest little circular economy businesses in Missoula.

First, they pick up, clean, repair, and sell used furniture and appliances (with a 30-day warranty). Non-repairable appliances are parted out. Everything from the knobs on the front to the feet on the bottom are saved in hopes of repairing another appliance that may come in the door. This reusing of parts helps keep Donation Warehouse’s prices low and helps reduce waste.

Second, they provide a stable source of funding for The Parenting Place, a nonprofit dedicated to child abuse prevention. In 2014 alone DW raised almost \$90,000, or 44% of the nonprofit’s budget. This helps The Parenting Place secure grants that would not otherwise be available.

What is the biggest challenge for this cool little business? A constant search for appliances. Hundreds of appliances every week are taken to the dump or turned in for scrap metal in Missoula. Unfortunately many of them are working, repairable, or have parts that can be used to fix other machines. Locally, salespeople, delivery drivers and even the managers of new appliance retailers are disappointed to see so many appliances head straight to be crushed, but corporate policies prohibit most stores from allowing these used appliances to go back into service. However, customers can choose to donate them to Donation Warehouse instead.

There is huge demand in the community for affordable used appliances but there are still a lot of people who don’t know that they can take their appliances to Donation Warehouse, and prevent child abuse as part of the deal.







## Book Sale Fundraiser

Help the SBC by dropping off your books from now until April 17 at **Green Ribbon Books**, or at any branch of the Missoula Federal Credit Union.

Then, visit Green Ribbon Books during their TZW month book sale on Friday, April 17 and Saturday, April 18, 10am - 6pm.

**BAG SALE: 4pm on Saturday, April 18**

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# What is the sharing economy?

The sharing economy takes many forms, all of which help ordinary people borrow, lend, or transfer ownership with or without an exchange of money. It may have started with Craigslist and eBay, but now there's Etsy, Airbnb, Lyft, and at least a dozen websites just for books. There's even a network for buying and selling wheelchairs and other [durable medical equipment](#).

Right here in Missoula, Axis Physical Therapy will let you donate used braces and other supports for use by other local people who get new injuries. The Jeanette Rankin Peace Center offers a “dish pantry” or lending library for forks and spoons, bowls, plates, and cups. And there are four neighborhood [Buy Nothing Project](#) groups in Missoula that allow people to give and receive things without money, as part of the “gift economy.”

Think this sounds like fringe fluff? Think again. [i:CO](#) collects 700 tons of textiles and shoes every day from consumers in the US to be repurposed internationally. Amsterdam, hardly an economic dead zone, has declared itself to be Europe's first “[Sharing City](#),” including buy-in from banks and insurance companies as well as government, non-profits (or NGOs), and new sharing economy pioneers.

The “sharing economy” may have been jump-started by the Internet and named by economists, but it's growing rapidly with no signs of slowing down. The Buy Nothing Project went viral after starting 18 months ago on Bainbridge Island—there are now 607 groups in 12 countries, including 10 groups in Montana.

For our purposes the sharing economy boils down to more creative ways to keep things out of the landfill. Want to organize a clothing swap or a solar cooperative? See the [American Dream Guide to Sharing](#) for step-by-step instructions. It will also tell you how to start a tool library (like the one at MUD), and how to launch a time bank.

What's a time bank? A way to exchange time! The [Missoula Time Bank](#) is a hidden gem of our local sharing economy. You can use it to find someone to help you repair your kayak, sew some curtains, or weatherize your home. Use it to help someone move, provide rides, or cook a healthy meal. Exchanging time can help to Move Missoula Toward Zero Waste.

Want to learn more about the sharing economy? Check out [Shareable.net](#).

## DID YOU KNOW?

According to researcher Anders Fremstad at the University of Massachusetts:

- » 5 million tons of goods were diverted from landfills in 2014 by Craigslist users.
- » \$9,090 per year is spent on easily shareable goods by the average US household.
- » 30% of Americans borrow something at least once a month, saving \$179 per year, and 8% borrow enough to save \$774 per year.
- » The average power drill is used only 6-20 minutes (citing Steffen 2007).

# Good To Go

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# Missoula Reuse Map



**Don't forget** about the many thrift stores in town that reuse clothing, furniture, and housewares.

## LOCATIONS

- Bayern Brewing** : 1507 Montana St.
- Book Exchange** : 2335 Brooks St.
- Donation Warehouse** : 1804 North Ave. W Suite D
- Eko Compost** : 1125 Clark Fork Lane
- Free Cycles Missoula** : 732 S 1st St. West
- Good Food Store** : 1600 S. 3rd St. West
- Green Ribbon Books** : 829 S. Higgins Ave.
- Home Resource** : 1515 Wyoming St.
- Missoula Food Bank** : 219 3rd St. West
- Missoula Public Library** : 301 East Main St.
- Missoula Urban Demonstration Project (MUD)** : 1527 Wyoming St.
- ReStore** : 3655 Highway 200 East. East Missoula

Canned & boxed food	Building material	New & used tools	Bikes & parts
Glass (limited types see article)	Working & non-working appliances	Yard waste & untreated wood	New & used books

# RECYCLE

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## Why is waste such a mess in Missoula? Contamination

Many Missoulians pile up their recyclables at home or look for a recycling bin when out and about. However, contaminants can creep into our recycling stream and deem the entire effort wasted. For example, the downtown Business Improvement District owns and maintains 28 recycling bins, but over half of the contents have to be sent to the landfill because of CONTAMINATION!

When contaminants such as food or liquids get mixed with recyclables, the valuable resources can't be recycled. Contaminants can cause a whole bin of #2 plastic to end up in the landfill, or a whole dumpster of office paper to be recycled with the less-valuable newspaper instead of recovering their nice long cellulose fibers to make more office paper. When recycling companies sell the materials they collect, contamination results in lower prices or even rejects that have to be shipped back to Missoula.

**"...over half of the contents have to be sent to the landfill because of CONTAMINATION!"**

Contaminants include things that can't be recycled, such as liquids and food residue. They also include things that **can** be recycled, but not in **this** bin. For example, plastic bags are collected for recycling at many Missoula supermarkets, but don't put them with other plastics in a recycling bin or at a drop-off recycling center.

Do your part to rinse and sort, and read the signs. Whether you use a pickup service or deliver them yourself, make sure to keep your recyclables free of contaminants.

## WHAT'S THE DIFFERENCE BETWEEN PRE-CONSUMER AND POST-CONSUMER RECYCLED CONTENT?

**"Pre-consumer" recycled content** is material that could have ended up on the floor in the production line. For example, imagine footbeds for flip-flops being cut out of a big sheet of rubber (or round biscuits cut from rolled-out dough). Companies are getting much better at collecting the "in-betweens" and reusing them rather than sending them to landfills. This saves handling costs as well as materials.

**"Post-consumer" recycled content** has been used by consumers and then recycled and reprocessed into new materials.

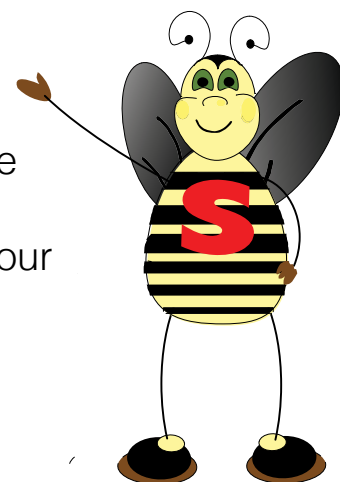
Products using post-consumer content demonstrate a higher level of commitment to waste reduction than pre-consumer content, which is considered "low-hanging fruit."

# TOP 6 RECYCLING CONTAMINANTS

- 1. Liquids, such as milk in milk jugs.** Emptying liquid from containers and giving them a quick rinse is necessary in order to recycle them.
- 2. Food wastes.** Rinse food residue from plastic and metals before recycling to protect the safety of workers and the environment. Soiled paper can often be composted in your backyard, but it can't go in the various paper recycling categories.
- 3. Plastic bags.** Grocery and newspaper bags cause serious clogs in recycling machinery and may cause loads to be rejected.
- 4. Caps and lids.** These can jam machinery and endanger workers. Not all plastic caps are recyclable, and they're hard to sort so the load gets tossed instead.
- 5. Hazardous wastes.** Toxins, including bio-hazards, like diapers and medical waste, need to stay out of recycling streams.
- 6. Non-recyclables with recyclables.** Every recycling collection point comes with instructions. Keep glass out of the aluminum, keep cardboard out of the magazines, and keep #5 plastic out of the #1 plastic bin. When getting swept-up with your recycling fervor, make sure that what you contribute will actually help to close the loop.

## KEY TAKEAWAYS

- Know what belongs in a recycling collection stream before adding to it.
- Read the signs on recycling bins and learn which items your recycling company collects.
- Rinse and sort.
- When in doubt, throw it out.



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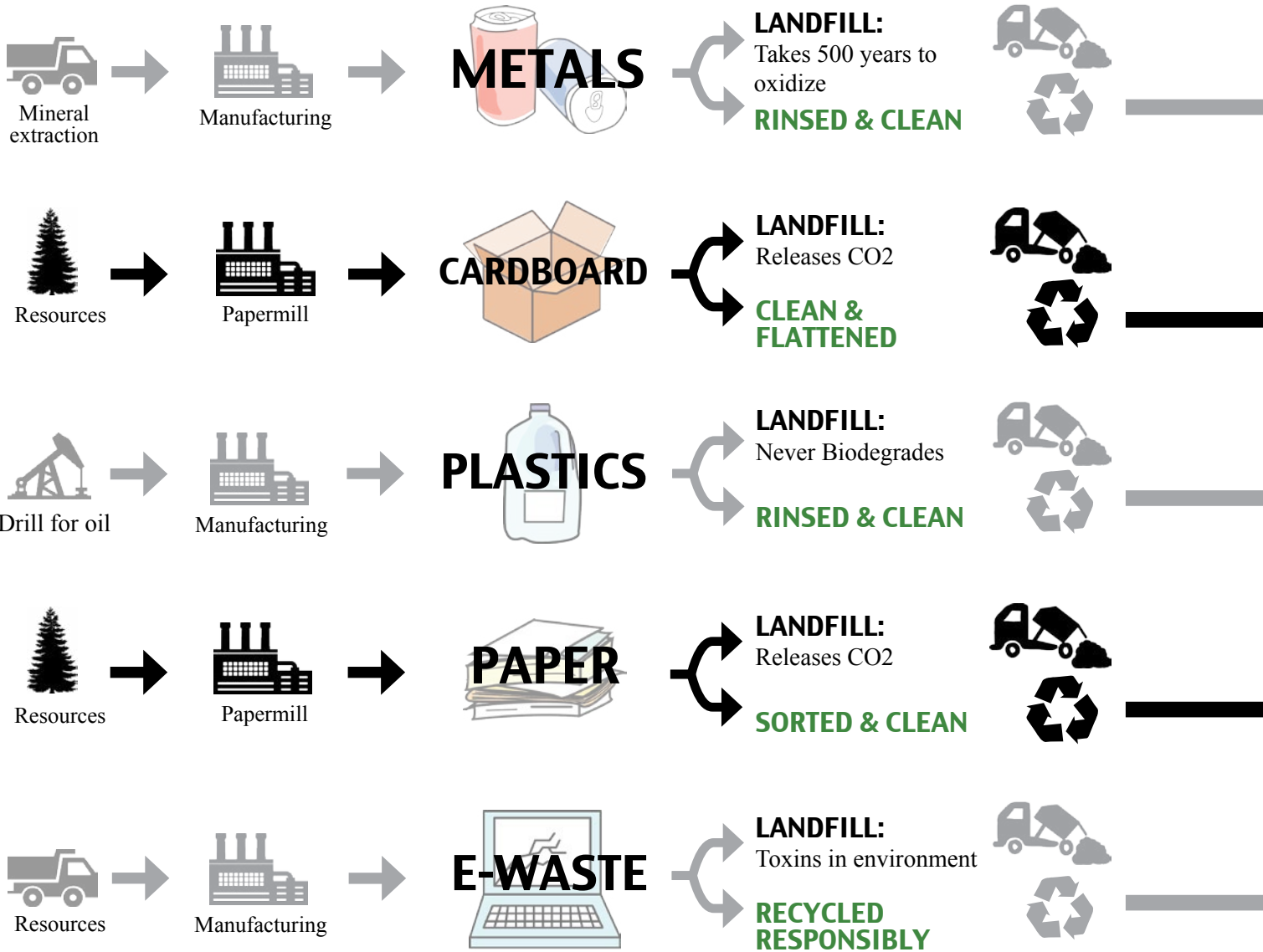
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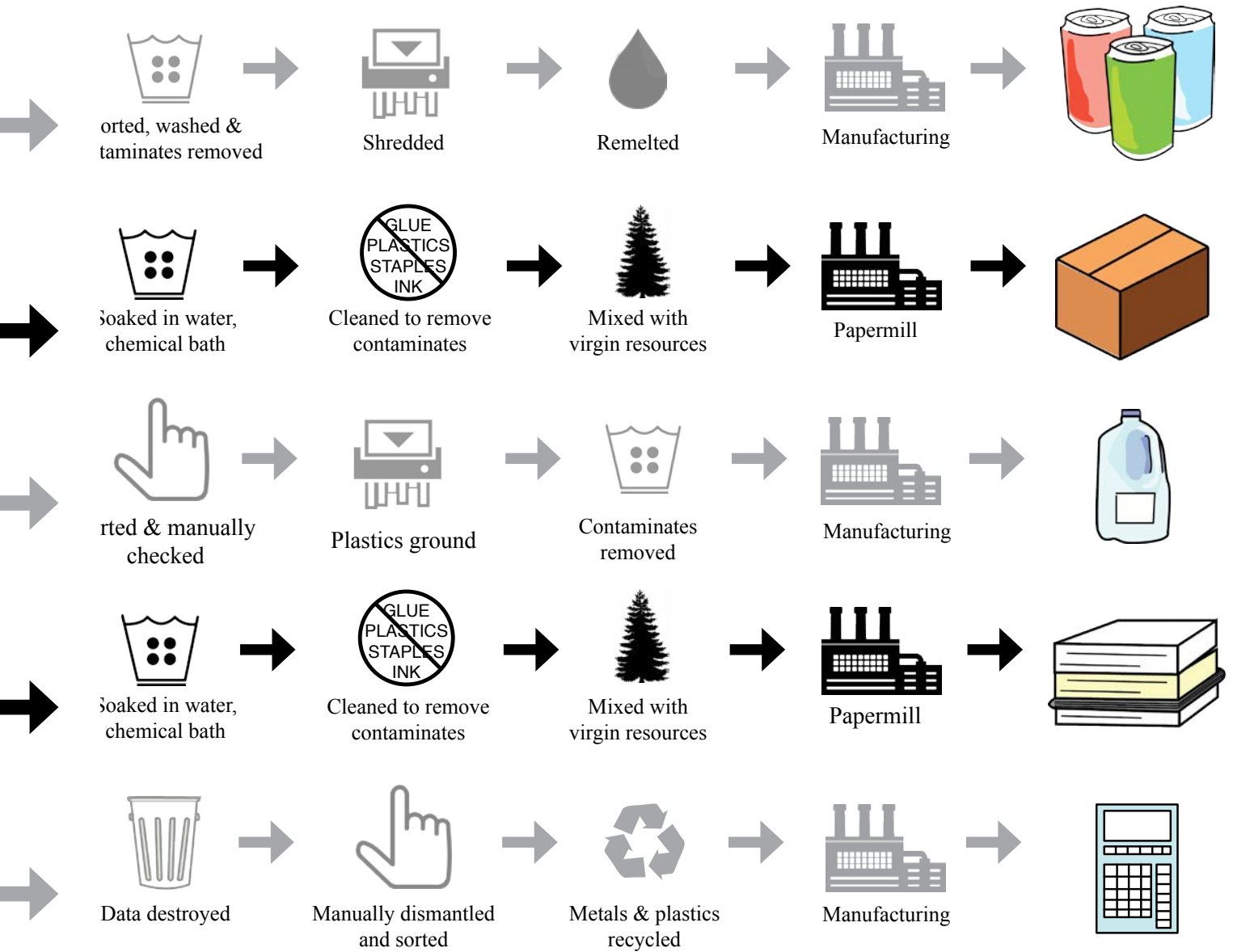
# What *can* happen to your stuff?



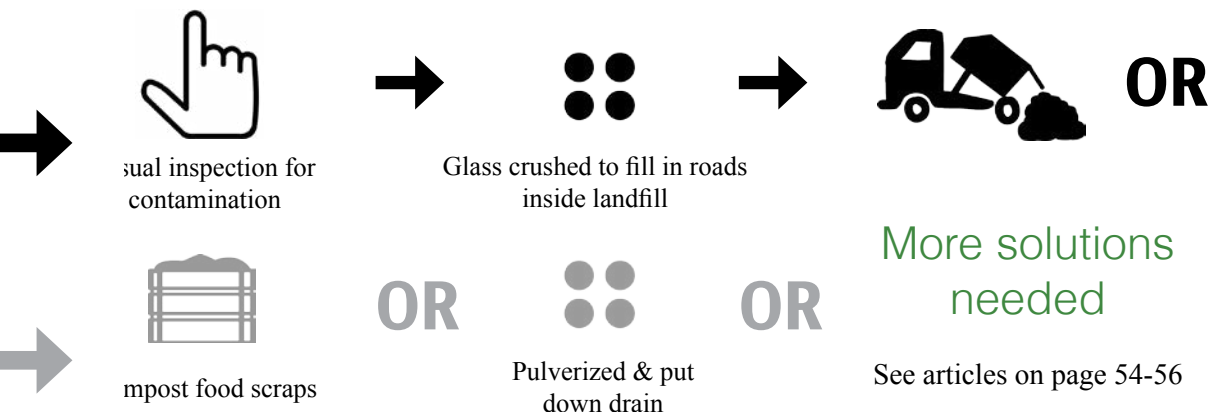
**Need markets: Help us close these loops!**



# 7 key recycling streams in Missoula



## Business opportunities



More ideas needed

See articles on page 60-62

# Recycling pickup services

## Republic Services of Montana (www.RepublicServices.com, 406-721-1121)

Offers “All-In-One” and cardboard pickup for businesses as well as two curbside recycling programs for residences:

“All-In-One” (single-stream) monthly pickup with a 96-gallon rolling cart provided.

### Accepts:

- Clean mixed plastics #1-7 (without lids)
- Clean clamshell containers (clear plastic packaging)
- All paper products (printer paper, junk mail, magazines, newspaper, phone books, shredded paper in a paper bag)
- Clean cardboard & boxboard (e.g. cracker/cereal boxes)
- Clean aluminum and tin cans (labels ok)
- NO Styrofoam, plastic bags, oil jugs, or glass.



Blue bag program (in some neighborhoods).

### Accepts:

- Clean plastics #1 & 2 without lids
- Paper products (office paper, junk mail, magazines, newspaper)
- Clean aluminum and tin cans (labels ok)
- NO Plastics #3-7, Styrofoam, cardboard, plastic bags, oil jugs, or glass.

[Click here to view and download this sorting sign for your house or office](#)

## i.e. Recycling (www.ierecycling.net, 406-396-5317)

Offers twice a month pick-up for residences and businesses.

### Accepts:

- Clean plastics #1-7
- Plastic grocery bags
- Office paper, junk mail, magazines, newspapers
- Cardboard, paperboard (cereal boxes, etc.), paper bags, egg cartons
- Milk cartons with plastic lids removed
- Up to 12 12oz bottles or other glass jars per pickup
- Unlimited blue glass
- Unlimited Bayern beer bottles
- Tin cans
- Aluminum cans and clean foil
- Cell phones

[Click here for “what’s with the blue bags?” article.](#)

Once a month: gently-used, clean clothing; non-perishable food items; scrap metal; e-waste (contact for more details)

## Garden City Recycling (www.gardencityrecycling.com, 406-493-1528)

Offers weekly, biweekly, or monthly pick-up for residences and businesses.

### Accepts:

- Office paper, junk mail, magazines, newspapers, paper bags, phone books
- Shredded paper (please bag)
- Non-corrugated cardboard (cereal boxes, egg cartons)
- Other paper products (no tissue paper or napkins)
- Aluminum cans
- Steel/tin cans, rinsed
- Metal jar lids
- Metal bottle caps
- Clean plastics #1-7 (no lids)





# Missoula Recycle Map



**Remember to keep it clean!**  
Rinse and sort so the full batch can be recycled.

- Metals, paper, rigid plastic, cardboard
- Plastic bags
- Metals
- E-Waste (see article)
- CFL bulbs
- Glass (see article)
- Most batteries
- Rechargeable batteries & fluorescent bulbs
- AniMeal Cottages (aluminum only)

- ### LOCATIONS
- Ace Hardware** : 2301 West Brooks St. & 905 East Broadway St.
  - Albertsons** : 1003 East Broadway St. & 2205 Oxford St. & 2230 North Reserve St.
  - AniMeals** : 1700 Rankin St. & various locations (see legend)
  - Axmen** : 7655 US Highway 10 W
  - Batteries Plus** : 2100 Stephens Ave.
  - Best Buy** : 2640 North Reserve St.
  - Lowe's** : 3100 North Reserve St.
  - Missoula Fresh Market** : 800 West Broadway St. & 3801 South Reserve St.
  - Opportunity E-Cycling** : 2821 South Russell St. & 6900 Kestrel Dr.
  - Pacific Steel and Recycling** : 2828 Palmer St.
  - Republic Services** : 3207 West Broadway
  - Staples** : 2501 Brooks St. & 2230 North Reserve St. Suite 300
  - Target** : 2420 North Reserve St.
  - Walmart** : 3555 Mullan Rd. & 4000 Hwy 93 South



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# Waste & recycling by the numbers

Pounds of waste generated per American per day: **4.38**

Pounds of waste generated per Montanan per day: **7.26**

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Tons of waste generated per American per year: **1.5**

Tons of waste generated by Americans in 2012: **251 million**

Tons of waste recycled or composted in the US in 2012: **87 million**

Percent of waste stream recycled or composted in the US: **34.5%**

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Tons of waste sent to Missoula Landfill in 2013: **211,000**

Percent of waste stream recycled or composted in Montana in 2003: **15%**

Percent of waste stream recycled or composted in Montana in 2012: **21.9%**

Percent of waste stream recycled in Missoula (estimated): **19%**

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Percent of energy saved by recycling PET compared to virgin material: **84%**

Percent of greenhouse gas emissions saved by recycling PET compared to virgin material: **71%**

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Percent of energy saved by recycling aluminum cans compared to virgin ore: **95%**

Energy saved by recycling one ton of aluminum cans: **76 times the energy saved from recycling one ton of glass**

Energy saved by recycling 12 aluminum cans: **Enough to power a laptop for 1 hour**

Number of 12-ounce aluminum cans manufactured in the time it takes to read this sentence: **50,000**

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Number of cars weighing the equivalent of waste sent to US landfills in 2009: **88 million**

Number of times the waste generated by Americans in 2009 would circle the earth: **24**

Quantity of resources consumed by humans in the past 50 years:

**More than in all previous history**

# Electronic waste: Laptops, TVs, and cell phones, oh my!

You may have one or two tucked in a drawer somewhere. Or perhaps you have a box full of them buried in the dark corner of your basement. It reached the end of its useful life or you fell in love with a younger, newer version and now you have no clue what to do with the old one.

Computers, televisions, stereos, printers, cell phones and batteries are common electronic products that make up one of the fastest growing segments of our nation's waste stream. According to the EPA, 438 million new consumer electronics were sold in 2009. Of those, 5 million tons were in storage (including junk drawers) and 2.37 million tons were ready for end-of-life management. Only 25 percent (of the 2.37 million) were collected for recycling, while the rest were dumped in the landfill.

Circuit boards, batteries, monitors, and Cathode Ray Tubes (CRTs) all contain heavy metals that when buried in a landfill can seep toxins into groundwater or be released into the air, poisoning the land and the community. Montana currently does not have legislation requiring electronic equipment be recycled or banning electronics from landfills.

So what can you do with e-waste?

The first step is to evaluate your e-waste. Is it repairable? A number of Missoula businesses repair cell phones, computers, and other devices. If the device is still in working order, consider donating it. Many great organizations help people in need stay in contact with donated cell phones or computers. Finally, if it is beyond repair or reuse, recycle responsibly.

Resources recovered in e-waste are valuable. Reclaiming these materials saves energy, reduces greenhouse gas emissions and ultimately reduces demand for virgin materials. According to the EPA, recycling one million laptops saves enough energy

to power 3,657 US homes for one year.

However, some e-waste recyclers simply ship waste to other countries where cheap labor, often by children, is used to take apart circuit boards and burn off plastic on electrical cords to harvest copper wire. Make sure that your e-waste recycler is committed to ethical practices. All e-waste collection sites shown on the Missoula Recycle Map in this Guide provide guarantees of ethical labor standards and that materials will not be incinerated or landfilled.

## CATHODE RAY TUBES (CRTs)

Most people are aware that CRTs are outdated (and ugly), but who knew that they would pile up in enormous heaps of unusable toxic waste? The CRT from one 27-inch TV includes about seven pounds of lead--two pounds more than the average house painted with lead paint in the 1970s!

Until recently, a few big smelters recovered materials from CRTs, but they've been slowly shutting down as markets for the resulting materials have dried up. Previously, these materials were used to make new CRTs, but no one wants those anymore.

Montana is one of the only states that still allows CRTs to be put in a landfill. You can take your old CRTs to our local recycling centers, but they will charge you a bit to take them. Hopefully someday the materials will be recoverable.



Image courtesy of Flickr - baselactionnetwork

# CASE STUDY:

## Opportunity E-Cycling opening on Earth Day

Opportunity E-Cycling is a new e-waste recycling center opening in Missoula. It will be operated by Opportunity Resources Inc., whose goal is to create jobs for people with disabilities.

Employees will disassemble collected e-waste with wire cutters, a screwdriver, and a little pry bar. Then they will sort it into dozens of bins, following sorting guidelines provided by the commodity buyers who will reuse the various parts and materials. E-waste is bulky, so this will require two warehouses, totaling 62,000 square feet, out by the airport.

Once open, Opportunity E-Cycling will take “anything with a power cord and a green board,” said ORI’s Russ McKinnon. He explained that a green board is a chip of some sort, and “even curling irons these days have a chip inside.” However, much of the operation will be focused on computers. They plan to rehab computers and donate or sell them at minimal cost, with Windows 7, via an online store.

ORI’s goal is to set up collection points around the state. They will focus first on the Highway 93 corridor from Hamilton to Kalispell plus Helena. Opportunity E-Cycling will take donations from the public at drop-off locations and at collection events. They also plan to work directly with hospitals, banks, schools, colleges, and universities, many of which have sensitive data handling requirements.

For example, one hospital may dispose of 70 computers every month. If a pickup is ordered for these computers, Opportunity E-cycling will put a bar code on each one and scan it. They will be transported and stored under high-security conditions. The bar codes will be removed once the data is destroyed, either by shredding the storage device or by using a Department of Defense certified product to wipe the memory clean so that the device can be reused. Finally, a Certificate of Destruction will be provided.

Opportunity E-Cycling will be an R2 certified facility, which guarantees proper security and data destruction. R2 certification also ensures that materials will stay in the US, and that nothing (except wood) from the operation will be put in a landfill. Thus, Opportunity E-Cycling will be a Missoula-based zero-waste business!



# WASTE

## Food and other organic waste

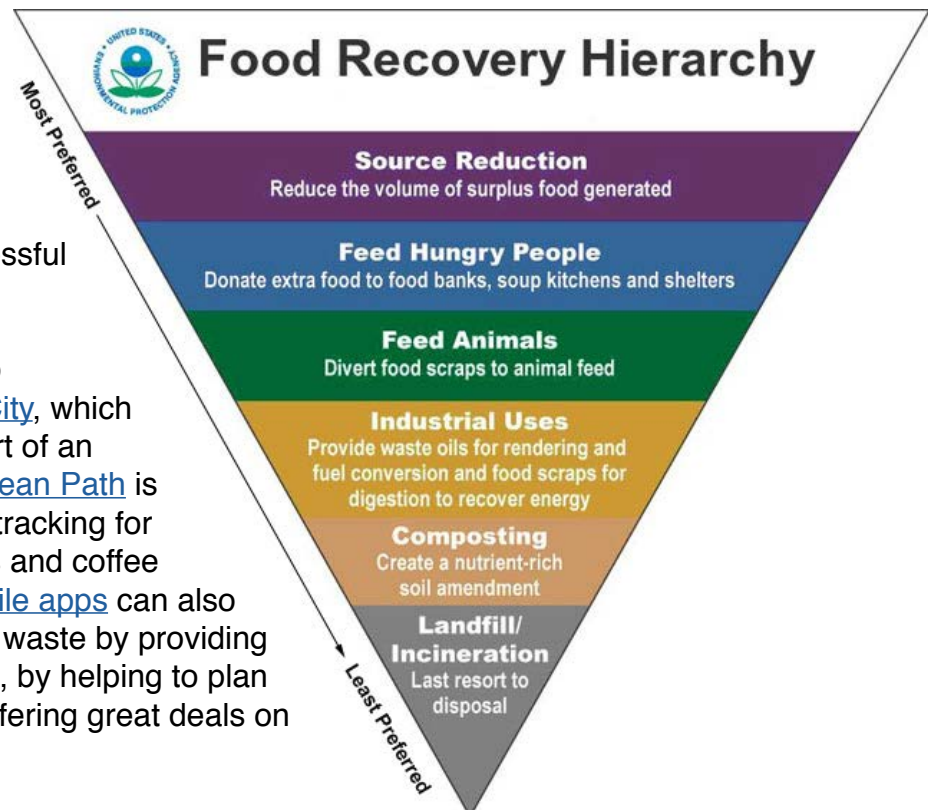
Each year in the US, we waste 35 million tons of food scraps, 14 million tons of yard trimmings, 13 million tons of soiled paper, and 13 million tons of wood debris. Instead of making compost, a beneficial soil amendment, 75 million tons of organic matter is burned or landfilled each year. Meanwhile, 99 million acres (28%) of US cropland face depletion of nutrients needed to maintain productivity.

Compostable organic materials are the largest component of municipal solid waste (MSW), with yard trimmings and food scraps accounting for 28% of the total. Food scraps make up 14.5% of MSW but only 2% of materials diverted from landfills ([EPA](#)).

Finding ways to change this picture is a cutting edge topic in the waste world. As of January 1, Seattle is imposing fines for putting food scraps, food-soiled paper, or yard trimmings in Seattle trash bins (joining Portland and San Francisco). Seattle began offering weekly curbside pickup of these organic discards in 2009. Last year, the City diverted 2571 tons of organic materials from the landfill. San Francisco celebrated a major milestone in late 2011 by collecting one million tons of compostable material through a curbside program started in 1996 that provides finished compost for use by local farmers.

As with glass, Missoula's food scraps remain an opportunity in search of solutions, a ripe target for savvy entrepreneurs. The good news is that solutions are emerging, including community-scale models. [Here](#) is a report highlighting 14 successful community initiatives in the U.S.

Watch for new small scale food scrap business models such as [Recycled City](#), which offers a weekly pick up service as part of an urban farming operation in Arizona. [Lean Path](#) is a company that provides food waste tracking for businesses of any size, from caterers and coffee shops to colleges and hospitals. [Mobile apps](#) can also help individual shoppers reduce food waste by providing recipes that use available ingredients, by helping to plan menus and shop efficiently, and by offering great deals on excess food at restaurants.

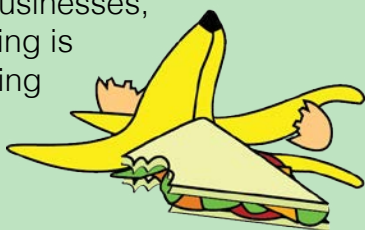


## WHAT CAN I DO WITH MY FOOD WASTE?

Unless you compost on your own, there isn't yet a great option in Missoula for returning the nutrients in your food scraps to productive soil. Hopefully that will change. In the meantime, these are your choices:

- Start composting!
- Grind up your food scraps and send them to the City of Missoula's Wastewater Facility via the sewer system.
- Throw them away (i.e. send them to the landfill).

Ready to take charge of your food scraps and reduce your methane contribution? [Click here](#) for a list of items that can be composted. [Check out](#) this recipe and cook-up your own batch of Delicious and Nutritious Dirt. Want tips for composting at your workplace? [Click here](#). For both residents and businesses, small-scale composting is manageable, rewarding and helps fight climate change.



## BENEFITS OF COMPOSTING

Food scraps and yard trimmings are valuable resources that can improve soil fertility and structure and stimulate healthy root development in plants. Small-scale composting is simple and easy. You can start with just leaves and grasses and eventually add food scraps. Composting also saves money you may spend on chemical fertilizers or commercial compost, and may reduce waste management costs.

For businesses, composting can positively impact your bottom line. SBC member Spirit at Play saved over \$140 per year in waste management costs after adding composting to all of their classrooms. For many companies, providing on-site composting will engage and inspire employees to higher levels of loyalty, satisfaction, productivity, and customer service. Today's workers want to know that they, and you, are part of the solution.

## WHAT HAPPENS TO SEWER WASTES?

Our municipal sewer system is an elegant waste collection system. Everything that goes down the drain, including street runoff and pulverized food scraps, ends up at the wastewater facility. Aerobic digestion and other processes are used to break down wastes. The results are 1) reclaimed water (see Hybrid Poplar case study), 2) methane, of which 65% becomes electricity (this will soon be 100%), and 3) sewage sludge that becomes compost at EKO Compost.

According to the Operations Manager at EKO Compost, it is the largest recycler in Montana, primarily taking organic materials from large commercial sources. Residents can also drop off clean wood, leaves, and grass clippings. EKO uses aerated static piles, with blowers that circulate air inside the piles to control heat. The piles heat up to 160 degrees in order to kill harmful microbes. No biosolids remain in the resulting material, which is sold as compost. EKO Compost is currently taking food scraps from Walmart as a pilot project, but can't take large amounts due to odor and rodent issues. A commercial composting facility that takes food scraps would need to be located away from a population center for these reasons.

## WHY SQUASH DOESN'T COMPOST IN A LANDFILL

If you thought that spoiled, squishy, local squash would easily degrade in the landfill, think again. Landfills are not aerobic. When food scraps and yard trimmings are buried in a landfill they begin to rot and decay. A byproduct of decomposition in an oxygen-starved environment is methane, a greenhouse gas that causes climate change.

NASA recently discovered that methane is as much as 105 times more potent than CO<sub>2</sub> as a greenhouse gas when compared over a 20-year time frame. The EPA states that landfills are the third-largest source of human-related methane emissions in the United States, accounting for approximately 18.2 percent of these emissions in 2012. That means our trash could be a bigger climate polluter than our cars and trucks!

# CASE STUDIES:

## Local organic waste leaders

### [Missoula Hybrid Poplar Water Reclamation Project](#)

This collaborative project takes advantage of the nutrient-processing abilities of poplar trees to further purify reclaimed water from the City's Wastewater Facility before discharging it into the Clark Fork River. A total of 96,000 hybrid poplar trees on 180 acres adjacent to the wastewater plant will be watered with 1.5 million gallons of water per day. In 2026, these trees will become new 18-foot boards, compost, and fuel for biofuel generators. The project sequesters carbon from the atmosphere, produces marketable products, and serves as a model for other projects.

### [UM Dining](#)

In addition to catalyzing local food production, UM Dining is a leader in reducing wastes. Going "trayless" in the Food Zoo initially reduced weekly food scraps by 62% and the decline continues. UM Dining avoided 18,000 styrofoam containers during 2013-14 by switching to reusable to-go boxes. UM kitchens return all used cooking oil to the local farm where it was grown and where it becomes biodiesel. In 2004, a pulper was installed, which extracts water from food scraps, reducing their volume by 88%. In 2010, a SOMAT machine was added, further reducing waste volume by 90%. The SOMAT machine can turn 230 lbs. of waste into 30-40 lbs. of rich soil enhancement within 24 hours without chemicals!

### [Green Source](#)

A newcomer to Missoula and the SBC, Green Source delivers fresh green smoothies to workplaces daily using local and organic produce whenever possible. Many waste types are avoided by operating on a pre-order and delivery basis rather than maintaining a retail store. From April-November, Green Source retrieves unused but delicious food scraps such as beet greens from restaurants, and pays farmers for greens that can't be sold otherwise. For example, pea sprouts that are being thinned, dandelions grown on unsprayed fields, and farmer's market leftovers may all find their way into a Green Source smoothie.



Image courtesy of UM Dining Services

## CLICK LINKS FOR MORE INFORMATION ON....

- [How to make food scraps into dirt at your business](#)
- [What is compostable?](#)
- [Recipe: Delicious and Nutritious Dirt](#)



Green Living has become more than just a trend among business and customers alike. For many, it is a way of life as we work to minimize impact on the environment.

Learn more in our special Earth Day publication Wednesday, April 22, 2015.



# RECYCLING

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Moving Missoula  
Toward Zero Waste.

(406) 396-5317

[contact@ierecycling.net](mailto:contact@ierecycling.net)

[www.ierecycling.net](http://www.ierecycling.net)

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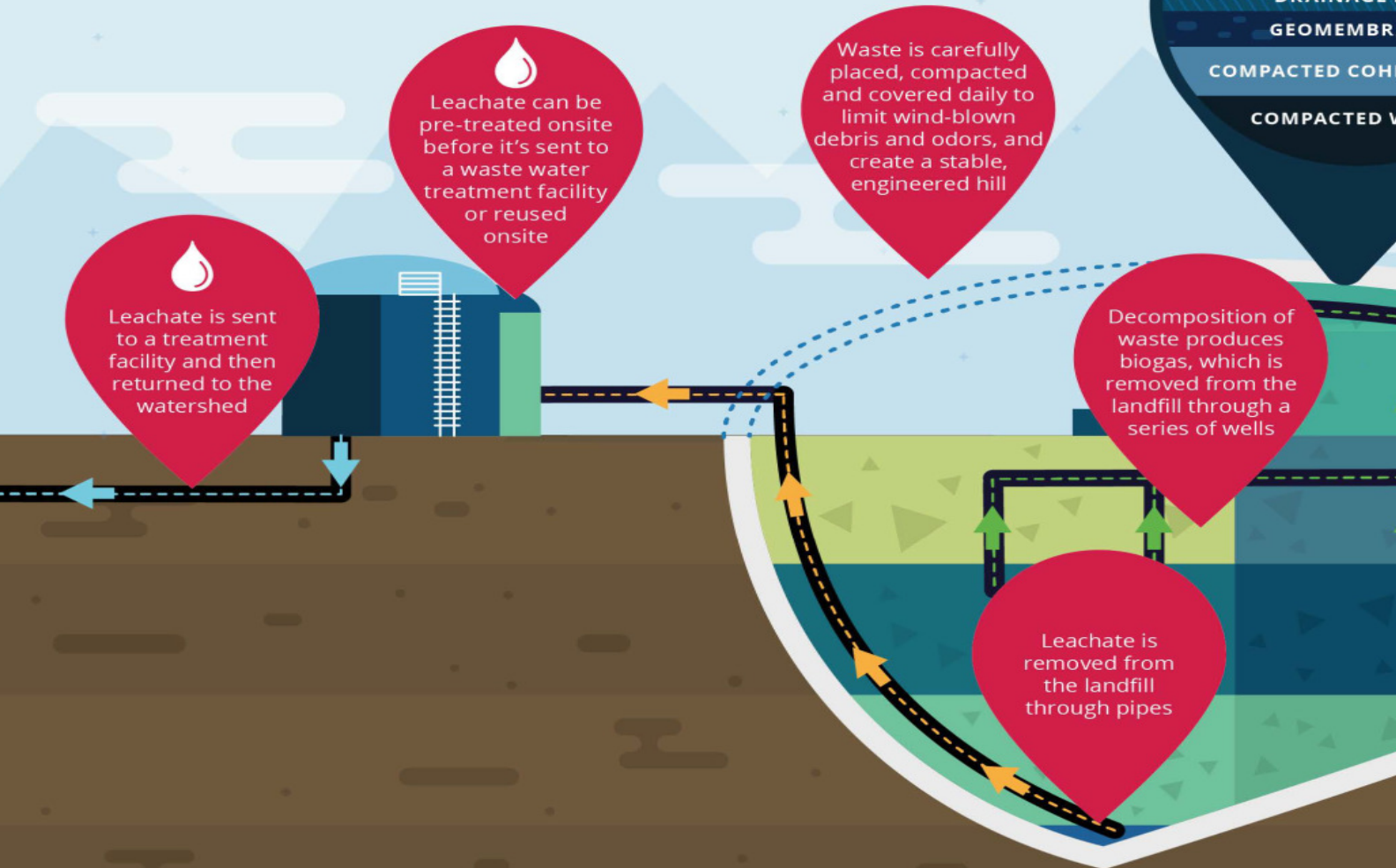
# Welcome to Mis



**REPUBLIC  
SERVICES**

Missoula's landfill has been permitted and operating since 1968. It receives wastes from Missoula and neighboring counties. It is privately owned by Republic Services of Montana (previously by Allied Waste and BFI), which also operates Missoula's primary waste collection service and one of our community's largest recycling centers. Republic Services is the second largest provider of solid waste collection, transfer, recycling and disposal services in the nation.

This illustration shows the major components of a cell in a modern regenerative landfill. As wastes come into the landfill, they are weighed, then delivered to the "working face" or the area of the cell currently being filled, and then compacted into the cell.

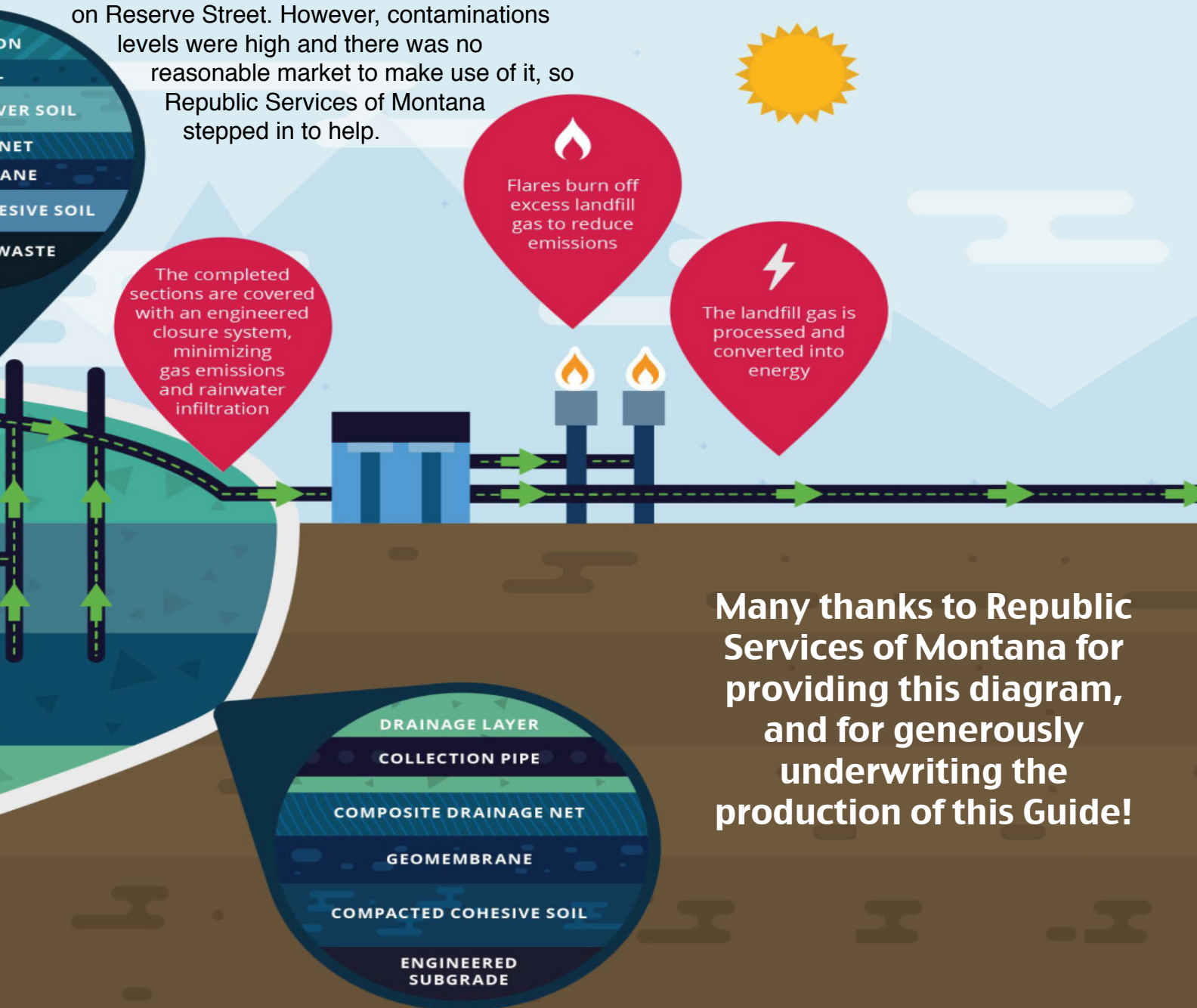


# Missoula's landfill!

Although cells are not designed to compost or biodegrade wastes, some wastes do break down, producing liquids (leachate) and biogas (methane). Currently, the methane produced by the Missoula Landfill is being flared off to reduce greenhouse gas emissions. However, Republic Services operates 72 gas-to-energy operations at other landfills and is currently working with rural electrical cooperatives to develop a system for producing electricity using the methane from the Missoula Landfill.

Glass collected by Target is now taken to the Missoula Landfill, where it is stored, crushed, and used as alternative road base throughout the landfill. Thankfully, glass contamination levels have decreased dramatically. Occasionally, dumpsters of glass are contaminated and are thus treated as waste rather than used as road base (see contamination article in this Guide). Fortunately, even when glass does end up in the landfill, it is a safe, inert material, so it poses no hazard.

Missoulians enthusiastically responded when Target Corporation began a glass collection site on Reserve Street. However, contaminations levels were high and there was no reasonable market to make use of it, so Republic Services of Montana stepped in to help.



**Many thanks to Republic Services of Montana for providing this diagram, and for generously underwriting the production of this Guide!**

# Behind the glass:

## The real deal on glass in Missoula

Glass recycling, or the lack of it, is by far the hottest waste topic on the tongues and minds of Missoulians. However, the straight scoop is that glass is trivial in the big picture of Moving Missoula Toward Zero Waste. Our job at the SBC is to dish out some tough love with the following data on glass recycling in the Garden City:

1. You would have to recycle 76 tons of glass to save the same amount of energy as recycling one ton of aluminum cans (EPA).
2. A glass smelting facility is not going to happen in Montana because the needed volume isn't available here. Our population is small, and glass makes up less than 5% of total Municipal Solid Waste nationwide (EPA).
3. Glass is heavy and dangerous to handle. Shipping it to a processing facility out of state takes a great deal of non renewable fossil fuels and contributes to rising greenhouse gases.
4. Glass is inert and completely harmless in the landfill, to humans and environment.
5. Contamination in a load of glass collected for recycling may result in the whole load being sent to the landfill.

[Click here](#) for a Missoulian article about glass recycling efforts in Missoula.

It doesn't take a business genius to see that glass is not the low-hanging fruit! If you have two hours a month to spend Moving Missoula Toward Zero Waste, please don't spend it on glass!

### WHAT IS GLASS?

Glass is made of three abundant naturally occurring raw materials: sand, soda ash, and limestone. Glass is inert, impermeable, chemically stable, and does not leach toxic chemicals. It is harmless to the environment and to human health.



**Public Works Department: Wastewater Division**  
**A Water Resource Recovery Facility**  
**Compost \* Bio-fuel \* Irrigation**

# Looking for ways to reuse glass in Missoula

Because Missoulians care passionately about glass reuse, many efforts have been made to find solutions. Once it is “pulverized,” ground glass is smooth and easy to touch, like sand or small pebbles. This “aggregate” can be used in many ways. For example, it can be used in landscaping. It can be added to cement or other materials to make roads, blocks, bricks, or other structurally supportive products.

Several ventures have attempted to commercialize pulverized glass in Missoula. One company tried to use it instead of gravel for driveways, and another tried to sell landscaping pavers made from ground glass. However, the economies of scale needed to make most glass-based products viable in the market generally require a larger supply of glass than Missoulians can provide. Thus these businesses tend to be based in larger metropolitan areas.

The LEED-certified headquarters of the Missoula Federal Credit Union on Brooks St. was built on a foundation made from fly ash and recycled glass. MFCU worked hard to get enough glass, hosting a number of glass drives. They ended up needing to import used glass from other parts of Montana to get enough. The result is beautiful—check it out!

As explained on previous pages, the glass collected at Target is used to build roads in the Missoula Landfill. Republic Services of Montana understands that Missoulians want more glass recycling, and they are always looking into new, sustainable options. There is a concrete plant in Livingston that might be able to burn up to 50 tons/month. There are markets for pulverized glass in Salt Lake City which may also be an option.

Government agencies and companies that build roads often buy gravel, which could potentially be replaced by pulverized glass. From time to time, contracts for glass for road base have been awarded. However, they have been inconsistent. This may become a bigger opportunity in the future.

If you are a wannabe glass recycling entrepreneur, we hope you’ll crack this nut! Knock your socks off!



## WHERE CAN I TAKE GLASS?

The main options available are the glass collection site at Target (2420 N. Reserve St.), and sending it to the landfill with your regular trash service. In addition, there are at least four ways to reuse particular kinds of glass in Missoula:

- Bayern Brewing will take all the used beer bottles you can send their way, (see next page for Bayern Case Study).
- The new Habitat ReStore takes glass vases, jars, glasses, and dishes, and offers workshops on how to reuse these items.
- The Good Food Store accepts clean glass jars with lids if they have at least 2-inch openings (but no detergent, salad dressing, beer, wine, or juice bottles, please). They sanitize these jars and make them available for customers buying bulk goods.
- i.e. Recycling takes limited types of glass as part of their pickup services.

# CASE STUDY:

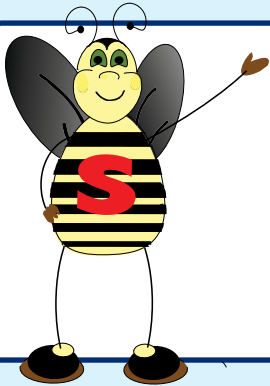
## Bayern Brewing

If you like drinking craft beer in bottles, Bayern Brewing offers a fantastic way for you to support our local circular economy. Inspired by German breweries that reuse bottles up to 30 times, Bayern invested \$250,000 in a bottle washing machine that can clean and sterilize 8,000 bottles per hour. They aim to reuse each bottle again and again.

Most glass in Missoula is WASTE.

Bayern RECYCLES, but only bottles like these...

The only problem is they can't get enough bottles! Ideally, Bayern wouldn't be buying new bottles at all. But even after reusing all the bottles they can collect, they still have to spend \$120,000 a year on new bottles. Missoulians throw away many times that in craft beer bottles, so someone who loves beer could make a nice little business out of collecting bottles and bringing them "home" to Bayern!



### To fit in Bayern's machine, bottles must:

- Be standard brown 12-oz. bottles
- Be in good condition: no cracks or chips, no cigarette butts or other garbage inside
- Be pry-off: no twist off threads
- Not have any embossing on the bottle (brand names, etc.)

The majority of bottled craft beer comes in this type of bottle. Returned bottles can come from any brewery (or soda company for that matter) as long as they meet these requirements. Bayern's machine takes the labels off, so you don't need to worry about those.

Take your used bottles to Bayern at 1507 Montana St. and they'll give you 5 cents each. You'll need a reusable Bayern "Ecopack" box made of sturdy waxed cardboard that holds 24 bottles.



Each Ecopack returned will earn you another 10 cents. You can get them at participating stores (see [website](#) for list), and of course at the Brewery. Ecopacks compact easily, reduce packaging costs, and close the loop on transportation containers. You can also drop off bottles for Bayern at the Republic Recycling Center on Broadway.

Cheers to Bayern for taking a leap into the economy of the future!

Click [here](#) and [here](#) to read more.



# OPPORTUNITY

# E-Cycling

## PROTECTING YOUR DATA AND THE ENVIRONMENT!

COMPUTERS \* MONITORS  
\* PRINTERS \* LAPTOPS \*  
CELL PHONES \* SERVERS  
\* COPIERS \* AND MORE



**\*PERSONAL DATA DESTROYED**  
**\*NO LANDFILL & NO EXPORT POLICY**  
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**\* BUSINESSES \* SCHOOLS \* GOVERNMENT \* RESIDENTS**

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[www.OpportunityEycling.org](http://www.OpportunityEycling.org)



Opportunity  
Resources, Inc.

A DIVISION OF

# OPPORTUNITY

Resources, Inc.

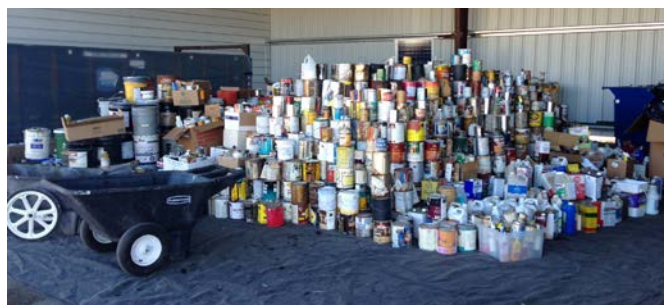
# What to do with hazardous waste

Household hazardous wastes are those that are flammable, explosive, reactive, corrosive, caustic, toxic, or poisonous. Businesses that produce small amounts (less than 2.2 lbs. of acute hazardous wastes per month) are subject to the same standards as households. These amounts are not subject to [federal landfill restrictions](#). Unlike most states, Montana does not further restrict hazardous wastes heading for landfill.

What does that mean? First, reduce your use of hazardous products! The Missoula County Water Quality District (MCWQD) provides a [list of alternatives](#) for common household cleaners and insecticides. Did you know that a mix of three parts vinegar to one part water will keep your windshield free of ice and frost?

Second, use and store hazardous materials safely. Once you are done, find constructive uses for items such as oil-based paints and stains. Can a friend or neighbor use partial containers of pesticides or solvents? Many items can be passed on usefully.

When it's time to dispose of hazardous wastes, [click here](#) for local places to take specific items throughout the year. This list includes dozens of places that take used motor oil. Finally, [check this list](#) for items accepted at the MCWQD [Haz Waste Days](#) each year in September.



## Haz Waste Days

The Missoula County Water Quality District (MCWQD) has sponsored an annual collection event for hazardous wastes in Missoula every year since 1993. With a few exceptions, most items are accepted from Missoula County residents for free. Businesses and out-of-county residents need to pay for shipping and disposing of the wastes they bring to the event.

Largely a volunteer effort, [Haz Waste Days](#) are a collaboration between the County and at least a half dozen dedicated partners. An oil and anti-freeze recycler spends six days a year to attend, even though the amounts collected are trivial compared to his normal commercial accounts. Most acids and bases collected at the event are diluted safely by the City Wastewater Division. Most paints and solvents are burned as fuel for a cement kiln in Kansas. A hauler takes certain items, such as chlorinated solvents, to a hazardous waste landfill in Idaho. "Special wastes," including some herbicides, insecticides, pesticides, organic acids, PCB ballasts, and oxidizers, are sent to Utah to be incinerated.

Many communities have "permanent sites" to collect and store hazardous wastes in 55 gallon drums. In Missoula, we have the Missoula Landfill and Haz Waste Days. Funded by taxpayer dollars and the generosity of volunteers, Haz Waste Days help to protect our environment from hazardous wastes. Please reduce, reuse, redesign, recycle, and support Haz Waste Days wherever you can.





# Your **FREE & LOCAL** community events site

Music. Art. Sports. Kids. Food. Education.  
 Family. Government. Business. Movies.  
 Seniors. Zero Waste. and More...

***Post a Sustainable Event today.***  
***Find a Sustainable Event today.***

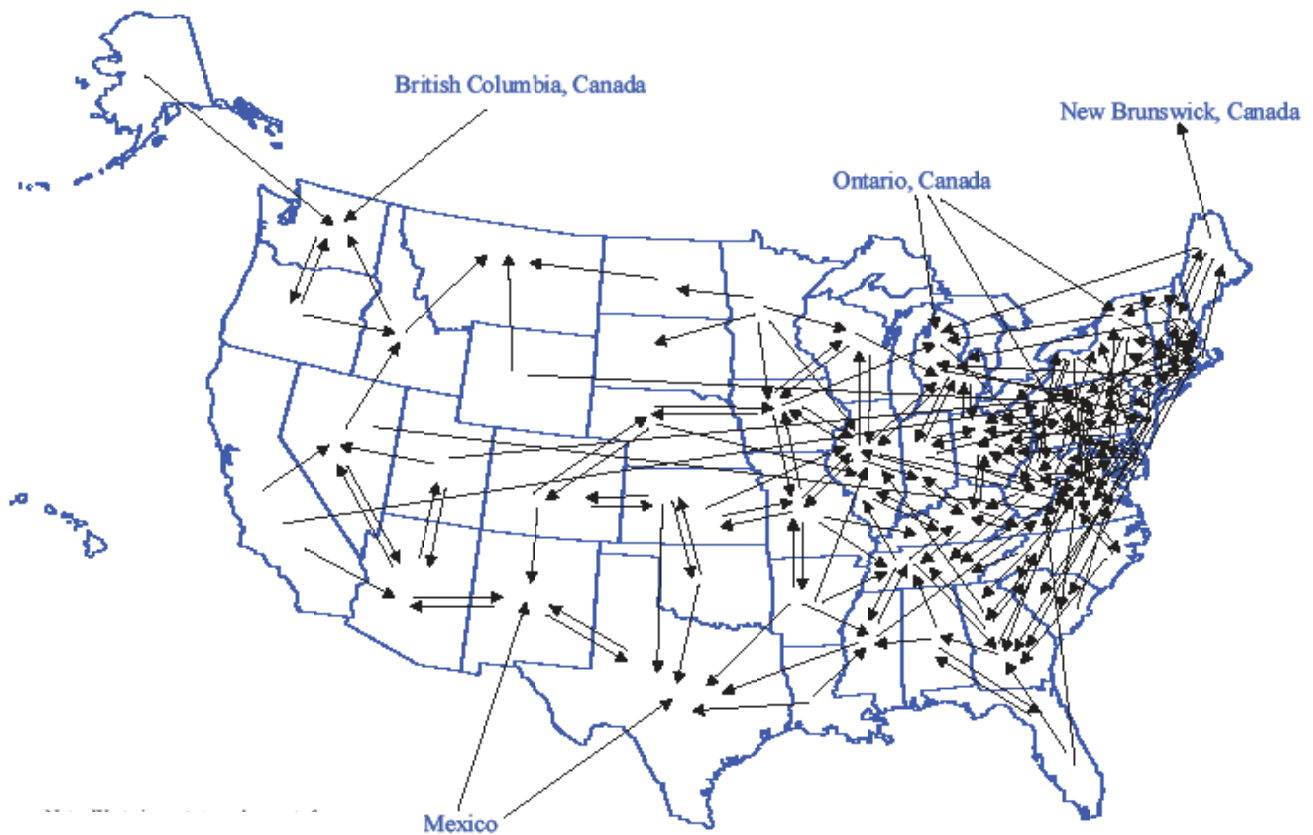
**MissoulaEvents.net | Missoula Indoor Ads**

BozemanEvents.net | HelenaEvents.com

BitterrootEvents.net | FlatheadEvents.net

OutpostEvents.net | EventsInButte.com

683Events.com



## DISTANCE WASTE TRAVELS TO LANDFILLS

*National Solid Wastes Management Association — Interstate Movement of Municipal Solid Waste*

## PACIFIC RECYCLING IS THE QUICK, ONE-STOP ANSWER TO MOST OF YOUR RECYCLING NEEDS

WE ACCEPT THE FOLLOWING PRODUCTS AND MATERIALS:

- Newspaper
- Office paper
- Plastic bottles\*
- Scrap steel
- Automobiles
- Sheet metal
- Fence wire
- Appliances
- Steel cans
- Aluminum cans
- Aluminum scrap
- Copper tubing
- Insulated wire
- Brass
- Lead
- Stainless steel

In addition, Pacific Recycling offers roll-off container and on-site cleanup service for large quantities or scrap. Call for details.

\*#1 and #2 grade only with caps removed, please.



2600 Latimer – One block behind Target – Missoula  
543-7280 • [www.pacific-recycling.com](http://www.pacific-recycling.com)

100% EMPLOYEE OWNED

[Sweden](#) produces 99% zero waste. In fact Sweden imports trash from neighboring countries to fuel 32 “waste-to-energy” plants, providing heat directly to homes. Shipping trash is a common practice, even in the US. But the practice of burning or incinerating garbage is controversial.

The downsides of burning waste would seem to be definitive. [Incinerators](#):

- Require three tons of waste to generate the same amount of energy as one ton of oil.
- Destroy renewable, recyclable resources.
- Compete for the same materials as recycling programs, and require large quantities of them.
- Are expensive to build (they cost twice as much as coal-fired power plants and 60% more than nuclear power plants).
- Are expensive to operate and maintain (costing ten times more than coal and four times more than nuclear).
- Release thousands of pollutants, even with the best scrubbers, including highly toxic ultra-fine particles (such as dioxins and furans), and 14 times as much mercury as a coal plant.
- Emit more CO<sub>2</sub> per kWh of energy than coal plants.
- Produce only one job for every 10-20 jobs produced by recycling.

Why then are incinerators on the table? [Because](#):

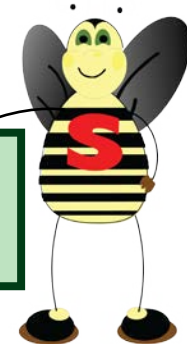
- Landfills have become unpopular.
- Recycling rates have been flat at ~31-34% since 2005, after fifteen years of growth from 16% in 1990.
- Waste generation in the US remains robust at 4.4 lbs. per person per day, higher than any other country.
- Communities in the US are highly variable when it comes to recycling, with laggards as well as leaders. For example, the recycling rate in Indianapolis is only 10%, and Ocean City, Maryland recently abandoned recycling completely in favor of incineration, saving \$500,000 per year.

A key issue in this “debate” is that a critical mass of participation is needed for recycling programs to be successful. Recycling programs with little buy-in are not cost effective. Cities, states, and regions that view recycling as a luxury may prefer burying or burning garbage because it seems cheaper and easier.

However, [Harrisburg Pennsylvania](#) went bankrupt because it couldn’t pay for its incinerator, and several other communities have come close to the same situation. A \$1 billion incinerator planned for Baltimore Maryland has been unable to attract private financing.

An incinerator planned for Los Angeles was canceled after a broad coalition of local and environmental groups demonstrated that moving toward zero waste instead would make money for the city, create good jobs, and improve the city’s reputation. LA ended up increasing investments in recycling and waste reduction programs. Perhaps Montana will follow that lead.

**Farewell and thank you for reading the SBC’s Moving Missoula Toward Zero Waste Guide! Please help us keep our community clean and beautiful!**  
**#ZeroWasteMissoula**



# SBC Member Directory

**All SBC member businesses are local and independently owned!**

406i.tel	370-3117	Exact Image	549-3575
Adventure Cycling Association	721-1776	Family Dental Group	541-2886
Adventure Life	541-2677	First Call Computer Solutions	721-4592
Amundson Painting and Plastering	880-4725	First Interstate Bank	523-4200
Animals	721-4710	Five on Black	926-1860
Axiom IT Solutions	880-6060	Frolic Salon	721-8313
Bad Goat Forest Products	493-1498	Galactic Farms	755-4832
Bakery and Restaurant Foods	728-7758	Garden City Harvest	523-3663
BalanceTech, LLC	543-5323	Good Food Store	541-3663
Bayern Brewing	721-1482	The Green Light	541-0080
Bernice's Bakery	728-1358	Green Source Missoula, LLC	239-5272
Betty's Divine	721-4777	GreenPath Properties	363-5063
Big Bear Sign	542-1871	Grizzly Liquor	549-7723
Big Dipper Ice Cream	543-5722	Habitat for Humanity Restore	549-8210
Big Sky Brewing	549-2777	Heritage Timber	244-5056
Biga Pizza	728-2579	Hide and Sole	549-0666
Biomimicry 3.8	543-4108	Home ReSource	541-8300
Bitterroot Flower Shop	542-0309	Homeword	532-4663
Black Bear Naturopathic Clinic, PC	542-2147	i.e. Recycling	396-5317
Black Coffee Roasting	541-3700	Ironwood Manufacturing Inc.	721-4747
Blackfoot Telecommunications Group	541-5000	Iza Asian Restaurant	830-3237
Blue Mountain Clinic	721-1646	JCCPS	761-2820
Bonfire Branding and Communications		Jeannette Rankin Peace Center	543-3955
Book Exchange	728-6342	KBGA College Radio	243-6758
Bravo Catering	541-4900	Kent Watson & Associates	721-3500
Brome Design Build Inc.	788-7077	KettleHouse Brewing	728-1660
Buttercup Market	541-1221	KPAX	542-4400
Butterfly Herbs	728-8780	Laurie Strand Bridgeman, LCSW	625-3258
ClearSky Climate Solutions	721-3000	Lifeline Produce	642-3943
Community Food and Ag Coalition	880-0543	Liquid Planet	541-4541
Compliance Monitoring Systems	880-2322	Lisa Swallow, CPA, PLLC	543-8003
CTA Architects Engineers	728-9522	Loft of Missoula	830-3000
D.A. Davidson & Co.	543-8244	Logan Photography	531-0839
Dark Room (the)	549-1070	MacArthur, Means & Wells Architects	543-3928
DePuy Building	531-2491	Mamalode	531-0535
Dixon Melons		Mannix Family Grass Finished Beef	793-5585
Donation Warehouse	240-4042	Market on Front	541-0246
Downtown Dance Collective	541-7240	Masala	370-9407
Dwight Thomas Carpentry	239-4795	Mast & Co Builders	546-3475
Eastgate Rental	549-5114	Meadowsweet Herbs Inc.	728-0543
Ecology Project International	721-8784	Merrill Bradshaw Carpentry	824-2525
Eko Compost	721-1423	Missoula Area Chamber of Commerce	543-6623
Elements Board Shop	542-0123	Missoula Art Museum	728-0447
eMpanadas	728-2030	Missoula Broadcasting Company	721-6800
Energetechs	721-2741	Missoula Community Access TV	542-6228
Estep & Weber Capital Management	830-3286	Missoula College	243-7811

Missoula Copy Center	549-2679	Submittable	(855) 467-8264
Missoula Downtown Association	543-4238	Sun Mountain Sports	728-9224
MissoulaEvents.net	880-0880	Sunelco Solar	642-6422
Missoula Fairgrounds	721-3247	Sunrise Coffee Shop	926-2720
Missoula Farmers Market	274-3042	Sweet Peaks Ice Cream	549-0028
Missoula Federal Credit Union	523-3300	Ten Spoon Winery	549-8703
Missoula Housing Authority	549-4113	The Wellness Way	
Missoula in Motion	552-6675	Tomorrow's Heirlooms	531-2344
Missoula Independent	543-6609	The Trail Head	543-6966
Missoula MADE Fair		Treeline Strategy, LLC	(202) 674-8104
Missoula Time Bank	543-0531	Transition Missoula	543-0531
Missoula Urban Demonstration Project	549-6790	UM Dining Services	243-6325
Missoula's Office City	543-7171	UM School of Business	243-4831
Montana Audubon	443-3949	United Way of Missoula County	549-6104
Montana Hemp Council	552-4693	Missoula Wastewater Division	552-6600
Montana World Trade Center	243-6982	Western Montana Lighting	543-7166
Mountain Broadcasting Co.	542-1025	Westridge Creative	327-1596
Mountain Line	543-8386	Wildwood Brewing Inc.	777-2855
Naturally Clean Services	672-4591	Williams Real Estate	239-2049
Oasis Montana Inc	777-4309	Women's Voices for the Earth	543-3747
Office Solutions and Services	541-2020	Wustner Brothers Honey	370-7436
Opportunity Resources Inc.	721-2930	Your Energy Fix	(360) 840-3492
Orange Street Food Farm	543-3188	Youth Homes	543-7792
Origins Education, LLC	549-0078		
OZ Architects	728-3013		
Pacific Recycling	543-7280		
Pam Voth Photography	546-2999		
Patrick J. McCormick, Realtor	240-7653		
Pattee Creek Market	721-2456		
Pattee Canyon Outdoor School	529-8608		
Payne West Insurance, Inc.	721-1000		
Pink Grizzly	728-3370		
Portico Real Estate	327-8787		
Providence St. Patrick Hospital	543-7271		
Quality Maintenance	550-3300		
Redfield Construction	239-2206		
Rich Ranch Outfitting and Guest Ranch	677-2317		
Riversong Gourmet	240-0914		
Rockin Rudy's	542-0077		
Rocking M Design, PC	541-8647		
Romaine's	317-1829		
The Roxy Theater	728-9380		
Scotty's Table	549-2790		
Secret Seconds/YWCA of Missoula	541-3210		
Shakespeare and Company	549-9010		
Sierra Club (Montana Chapter)	549-1142		
The Silk Road	541-0752		
Spirit at Play	728-7001		
The Sports Exchange	721-6056		
Stockman Bank	258-1400		

### Interested in Membership?

The Sustainable Business Council enhances the economic, social, and environmental value of locally-owned businesses and the customers and communities they serve.

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