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Study finds plastics packaging helps reduce solid waste

Authors say plastic packaging is linked to declining waste rates.

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September 19, 2018

Municipal Solid Waste Plastics

A new study by the Earth Engineering Center at City College of New York (EEC|CCNY) finds that plastics play a role in creating an environment where municipal solid waste (MSW) generation rates decline, even when income and consumption rises.

Historically, the amount of MSW produced by a country or region rises with the economy or personal consumption expenditures (PCE). In the mid-1990s, the rate of MSW generation stopped tracking along with PCE in the United States and began to slow. This phenomenon is known as decoupling, EEC says. In 2010, the amount of waste produced in the U.S. declined despite a rise in consumer spending. The study's authors attribute the decoupling to the increased use of plastic in packaging.

"We knew that the overall amount of plastics in the waste stream increased substantially over time due to increased consumer use. We extensively studied the potential for energy recovery and have quantified the impact there," says Marco Castaldi, director of the EEC|CCNY. "We were surprised to learn in this study just how much of an impact plastics had on solid waste weight and volume reduction over the years."

EEC|CCNY also looked at scenarios where other types of packaging was used in place of plastic packaging to understand plastics' potential impact on the total MSW generation in the U.S. On average, products made with alternatives require 3.2 times more material than plastics. For packaging specifically, the combined weight of alternative materials is about 4.5 times more than the weight of plastic packaging.

"Plastics have an important role to play in delivering sustainable outcomes," says Keith Christman, managing director of plastics markets for the American Chemistry Council (ACC), Washington. "By using less material, plastics help reduce greenhouse gas emissions and waste generation, as well as save energy. And our industry is working to further realize plastics' sustainability benefits through our commitment to recycle or recover all plastic packaging by 2040."

To accompany the study's release, ACC has developed a new interactive packaging substitution calculator for packaging professionals to estimate the weight and volume savings, as well as the potential to reduce municipal solid waste.



What's the Post-China Ban Future for Materials Recycling Facilities?

Gemma Alexander October 26, 2018

The first materials accepted for curbside recycling had to be carefully sorted into their own bins. But source-separating was a barrier to recycling for many households.

Single-stream, or commingled, recycling became a common strategy for municipalities seeking to raise recycling rates. For nearly 20 years, it worked. But now, thanks to a change in Chinese policy, America's recycling facilities are in crisis.

Single-Stream System

With single-stream recycling, one bin containing all recyclables is collected at the curb and delivered to a materials recycling facility (MRF). There, a series of mechanical sorting mechanisms separate the recyclables into salable commodities — primarily paper and plastic. By 2017, roughly one-third of all U.S. recyclables were sold to China for further sorting and reuse. Further sorting is necessary because single-stream recycling contains contaminants — on average, 25 percent. MRFs can reduce contamination to about 5 percent. China is asking for better sorted, clean materials.

For years, China pushed for cleaner materials. Regulations were passed in 2006. In 2013, the Green Fence campaign attempted to enforce the earlier rules.

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Single-stream, or commingled, recycling became a common strategy for municipalities seeking to raise recycling rates. For nearly 20 years, it worked. But now, thanks to a change in Chinese policy, America's recycling facilities are in crisis.

In 2017, China's National Sword campaign resulted in the blocking imports of mixed paper, post-consumer plastics, and vanadium slag. Chinese officials set a contamination limit of 0.5 percent on all other waste imports — effectively a total ban. Despite years of Chinese efforts to stop the flow of low-grade recyclables, the ban came as a shock to the West.

There are two paths out of the crisis and both involve radical improvements in recycled materials contamination — the impurities that can . The U.S. could clean up its recycled materials to meet the new Chinese standard or start to process more material domestically. If U.S. recycled materials were less contaminated, domestic recyclers would be in a position to operate more profitably.

Status Quo

After the ban was announced, commodities began piling up at MRFs around the country, forcing many communities to take emergency measures. The West coast was especially dependent on China, and struggled to find other markets. Oregon lifted a ban on recyclables at landfills. Communities in Washington state and Idaho are directing recyclables to the landfill, too. Douglas County, Oregon, has stopped recycling altogether.

With China off the market, the glut of recyclable paper and plastic has led MRFs to pay to dispose or recycle materials they once sold for profit. Some recycling facilities have found markets in Thailand, Vietnam, Indonesia, and India. But neither the U.S. nor the Asian countries that import recyclables have China's capacity. Communities like Chittendon, Vermont, Lancaster, Pennsylvania, and El Paso, Texas, are raising rates to compensate for the loss of revenue. Many MRFs are still stockpiling recyclables, hoping the situation will change.

Opportunity

Every challenge is also an opportunity. It's not clear if nations will rise to the challenge of the ban. In China, the ban seems to have led to greater consumption of virgin materials, but the ban has been challenged at the World Trade Organization.

State and local governments are renewing their commitment to zero waste policies. Upgrading domestic MRFs to produce a cleaner product and expanding domestic markets for paper and

plastic is an obvious priority but will require large-scale investments that will take years to implement.

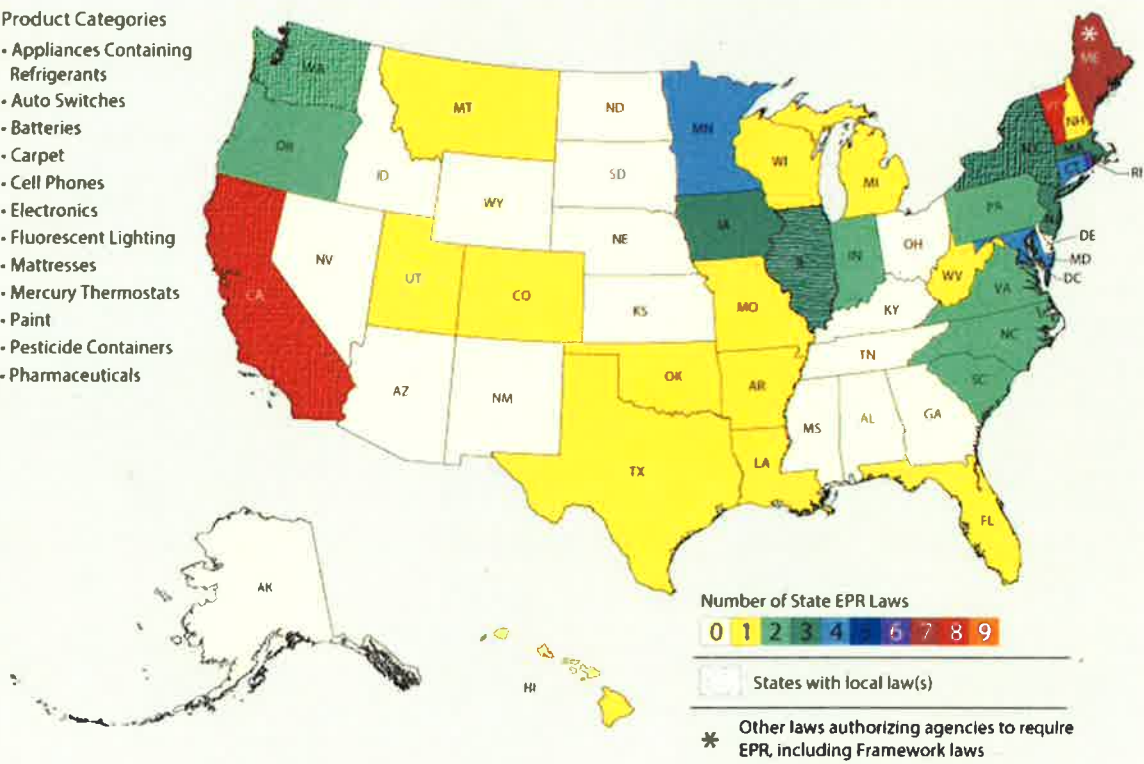
Systemic changes to manufacturing, distribution, and waste management are needed globally — we need to establish a circular economy that captures materials from products after their useful lifetime. Individual action is a big part of the solution. Citizens must also strive for zero waste to keep resources from finding their way into a landfill.

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EPR Laws in the United States

Product Categories

- Appliances Containing Refrigerants
- Auto Switches
- Batteries
- Carpet
- Cell Phones
- Electronics
- Fluorescent Lighting
- Mattresses
- Mercury Thermostats
- Paint
- Pesticide Containers
- Pharmaceuticals



Source: Product Stewardship Institute, Inc. (2017)



WHAT CAN I RECYCLE?

TOP 10 IN THE BIN



1. CARDBOARD
2. PAPER
3. FOOD BOXES
4. MAIL
5. BEVERAGE CANS
6. FOOD CANS
7. GLASS BOTTLES
8. JARS (GLASS & PLASTIC)
9. JUGS
10. PLASTIC BOTTLES AND CAPS

ALSO RECYCLABLE BUT NOT IN CURBSIDE BIN

PLASTIC BAGS
AND WRAPS



ELECTRONICS



TEXTILES



Find out about your local recycling options here:
www.iwanttoberecycled.org



**KEEP AMERICA
BEAUTIFUL**



**National
Waste & Recycling
Association**
Collect. Recycle. Innovate.



*Badgeland **

Wisconsin Recycles



The following items are **banned** from landfills and incinerators statewide and should be reused, recycled or composted.

Containers

- #1 and #2 plastic bottles and jars
- Aluminum containers
- Bi-metal cans
- Glass containers
- Steel (tin) cans

Paper and Cardboard

- Corrugated cardboard
- Magazines, catalogs, and other materials on similar paper
- Newspaper and newsprint materials
- Office paper

Yard Materials

- Grass clippings
- Debris and brush under 6" in diameter
- Leaves

Vehicle Items

- Lead-acid vehicle batteries
- Tires *
- Used oil filters
- Waste oils *

*These items may be burned in a solid waste treatment facility with energy recovery.

Appliances

- Air conditioners
- Boilers
- Clothes dryers
- Clothes washers
- Dehumidifiers
- Dishwashers
- Freezers
- Furnaces
- Microwaves
- Ovens
- Refrigerators
- Stoves
- Water heaters

Electronics

- Cell phones
- Computers – desktop, laptop, netbook, tablet
- Computer monitors
- Computer keyboards and mice
- Computer scanners
- Computer speakers
- Desktop printers (including those that fax and scan)
- DVD players, VCRs, DVRs and all other video players
- External hard drives
- Fax machines
- Flash drives/USBs
- Other items that plug into a computer
- Televisions

Why ban items from the landfill and incinerator?

The items on this list are made of materials that can be reused in new products. Some also have toxic components that we do not want in our groundwater, air or soil. Recycling and composting allow landfills to last longer, provide markets with valuable reusable materials, create jobs, and prevent pollution.

Why not ban more materials?

Corrugated cardboard is banned while waxed cardboard is not. Some things with plugs, like computers, are banned, while others, like toasters, are not. Why? Current bans cover some of the most easily reusable or most toxic materials on the market today. Eventually more items may be added to this list as new recycling markets develop or the types of materials we throw away change.

Some communities go above and beyond what is required by state law. Check with your local government or recycling service provider to find out what additional materials are accepted for recycling in your area. For more information about Wisconsin's recycling program, search "recycle" at dnr.wi.gov. Wisconsin's recycling requirements apply to everyone in the state at all residences and places of work or play.



DNR

Wisconsin Department of Natural Resources
Bureau of Waste and Materials Management

P.O. Box 7921, Madison, WI 53707 • (608) 266-2111
DNRWasteMaterials@wisconsin.gov

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PUB-WA-1574 2012

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RECYCLE RIGHT

We're proud that each year millions of Americans (many of whom are our customers) recycle. While the shift toward single stream recycling makes recycling incredibly easy (single stream = all items going into one bin or cart), it also means people mix in items that cannot be recycled with those that can. The result: each year environmental service providers and local governments spend millions of dollars removing items (also called contaminants) that shouldn't be in the recycling stream or must discard overly contaminated items that could have been recycled.

We want to be part of the education effort currently underway to help everyone recycle smart. Here are a few pro-environment tips and commonly mistaken recyclable items. Share with your family, friends and neighbors, so we can all make our Mother Earth proud.



WHAT CAN I RECYCLE IN MY CART OR BIN?












While recycling is the first step in the process, it's important to put materials in the cart or bin that actually belong there. Know before you throw! The [National Waste & Recycling Association](#), working with [Keep America Beautiful](#), the [U.S. Environmental Protection Agency](#), and the [Solid Waste Association of North America](#), have come up with a list of acceptable recycling items so people will know what can be accepted at any recycling facility in the United States. [Click here for the What Can I Recycle? Flyer.](#)

- MAGAZINES
- FOOD BOXES
- BEVERAGE CANS
- PLASTIC JARS
- JUGS
- PLASTIC BOTTLES & CAPS (#1 - #7)








COMMON RECYCLING MISTAKES

These are commonly mistaken items that often show up in recycling carts and bins, but they **CANNOT BE RECYCLED AT YOUR CURB**. Please don't toss these in with your recycling.

 <p>PLASTIC GROCERY BAGS</p>	<p>These are the most common item in the bin or cart that shouldn't be there, and they can be the most detrimental. When they get caught in the recycling sorter, they have to shut the whole system down and manually pull them out. Instead, consider recycling them by taking them back to grocery, pharmacy, or big-box stores where there are specially designated bins for recycling plastic bags.</p>
 <p>TAKE-OUT CONTAINERS & DONUT BOXES</p>	<p>Food residue can contaminate the boxes or other recyclable material. They can only be recycled if they are free of food waste and residue from food (think cheese from pizza).</p>
 <p>POLYSTYRENE (STYROFOAM)</p>	<p>Although Styrofoam is recyclable, it requires highly specialized equipment that single stream recycling facilities are not equipped with. Some restaurants (such as Chick-fil-A) accept their own Styrofoam cups for recycling.</p>
 <p>PAPER COFFEE CUPS</p>	<p>Although often thought of as a better alternative to Styrofoam, paper cups pose issues to recycle because of the plastic coating applied to prevent leaking. Your best bet is to bring your own mug.</p>
 <p>SHREDDED PAPER</p>	<p>Shredding paper reduces its size so dramatically that it ends up mixed with the residue or glass at recycling facilities. Because the machines sort broken glass and other debris by size, the shredded paper often gets destroyed or disposed of because it ends up in the wrong place. Once it is mixed with glass or residue, it cannot be recovered for recycling.</p>
 <p>PIZZA BOXES</p>	<p>This is one of the most common recycling mistakes. Although they are made of cardboard, the grease from the pizza contaminates the raw material. You can tear off the untarnished parts and recycle those though!</p>
 <p>HOUSEHOLD GLASS</p>	<p>Items like window panes, mirrors, light bulbs and dishes are dangerous and should be left out of recycling. Light bulbs can be recycled at many hardware and home improvements stores. Dishes that are broken can be donated to local charities.</p>
 <p>WET PAPER</p>	<p>Paper that has gotten wet can make recycling difficult or impossible. Take care to cover your recyclables to keep them safe from the elements. Wet paper should be discarded with the trash.</p>
 <p>MILK & JUICE CARTONS</p>	<p>These are often coated with a thin layer of wax but can still be recycled in many (but not all) communities. Best bet is to check with the local municipality, hauler or recycler to see if these can be recycled.</p>
 <p>BABY DIAPERS</p>	<p>The plastic and paper from them cannot be salvaged. Plus it's just plain gross!</p>
 <p>AEROSOL CANS</p>	<p>While these are made of metal, because of the chemicals used to pressurize the cans, they are classified as a household hazardous waste and should be discarded as such - not with recyclables.</p>

No Wax since Kennedy was president

 AEROSOL CANS	with the garbage.
 CERAMICS & POTTERY	This includes things like coffee mugs and old flower pots. Look into donating items like this if they are in alright shape, someone else may be able to reuse them!
 PAINT, PESTICIDES, AUTOMOTIVE FLUIDS, DIESEL FUEL, GASOLINE, KEROSENE & CAR BATTERIES	They cannot be accepted and should be disposed of at a hazardous waste disposal facility.
 AUTOMOTIVE PARTS & SCRAP METALS	These are too large and cumbersome for recycling equipment and could cause injury.
 HYPODERMIC NEEDLES	At one time, people were told that it was safe to put needles into a plastic bottle. It is not safe. Workers can be exposed to grave illness and blood borne diseases. People need to properly dispose used needles.

MORE HELPFUL TIPS

PLACE ALL **RECYCLABLES LOOSE**
IN THE **RECYCLING BIN OR CART.**



**RINSE PLASTIC AND METAL
CONTAINERS TO REMOVE ALL
REMAINING RESIDUE.**

DO NOT PLACE **YARD WASTE**
YOUR **RECYCLING CART.**



ALL ITEMS MUST BE **IN YOUR CART OR BIN** TO BE
COLLECTED. **DO NOT PLACE RECYCLABLES ON TOP OF
OR AROUND YOUR CONTAINER.**



**BOTTLE CAPS CAN REMAIN ON
THE ITEM AND CAN BE RECYCLED
TOO!**

IF YOUR RECYCLING PROGRAM
ACCEPTS **GLASS**, YES, **ALL COLORS**
ARE ACCEPTABLE.



**WHEN IN DOUBT, THROW IT
(IN THE GARBAGE).**

Sources:

National Waste & Recycling Association Begin with the Bin
Earth 911: Cities weigh in on the cost of contamination

 | What Can I Recycle? Flyer

BLOG RELATED CONTENT

The Recycling Mistake You Probably Never Knew You Were Making

It seems everyone has gone green or is getting there soon, but you could be botching your recycling efforts and not even know it. Plastic grocery bags are a little-known...(READ MORE)

Stop the Great Pacific Garbage Patch Growth

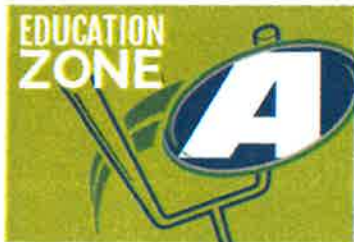
The Great Pacific Garbage Patch (GPGP) is the world's largest collection of floating trash.* While much of the contamination comes from countries that don't have sound solid...(READ MORE)

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Your moving day is right around the corner, and you have to start the moving process: sorting through everything, deciding what to keep, having a yard sale and of...(READ MORE)



About Advanced Disposal

Advanced Disposal (NYSE: ADSW) brings fresh ideas and solutions to the business of a clean environment. As the fourth largest solid waste company in the U.S., we provide integrated, non-hazardous solid waste collection, recycling and disposal services to residential, commercial, industrial and construction customers across 16 states and the Bahamas. Our team is dedicated to finding effective, sustainable solutions to preserve the environment for future generations.

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Happy New Year! All routes are back on schedule the week of January 7, 2019. ()

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Garbage

Recycling

Recycle Collection Every Other Week

Loose recycling must fit in the green recycle cart. Automated trucks cannot pick up any material that is next to the cart. Please put the recycle cart out the night before your collection day or by 6:00am the morning of pickup. If your green recycle cart is out on the wrong week it cannot be collected.

Please place the following items in the Green Recycle Cart:

MIXED CONTAINERS

- Aluminum cans & clean aluminum foil
- Tin cans, steel cans, aerosol cans, empty/dried paint cans
- Glass bottles & jars
- #1-7 plastic bottles or jugs

- Milk cartons, juice boxes, soup cartons

MIXED PAPER

- Newspaper, magazines, books, mail, school/office paper
- Brown corrugated cardboard (flattened)
- Gray chipboard (cereal & shoe boxes)
- Brown paper bags

SHREDDED PAPER

- Please put in a clear plastic bag, tied, and place in the Green cart.

Do not put the following items in the green cart:

- Styrofoam
- Yard waste
- Trash
- Household hazardous waste
- Construction materials
- Plastic bags & toys

Do not put recycling in plastic bags. (see exception for shredded paper)

Bulk Items

Schedule

Drivers



(<http://www.johnsdisposal.com/site>)

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Garbage

Garbage Collection Every Wednesday

All garbage must be contained inside the new brown garbage cart. Please put garbage out the night before your collection day or by 6:00am the morning of pickup.

Please place the following in the Brown Garbage Cart:

- Mixed trash
- Plastic wrap & bags
- Broken toys
- Ceramics
- Light bulbs
- Bagged garbage & food waste
- Styrofoam & other loose trash

Do not put the following items in the garbage:

- Yard waste

- Recyclables
- Household hazardous waste
- Cardboard boxes
- Construction materials

Recycle Collection Every Other Wednesday

(The arrows on the lid of the cart must point to the road)

- The recycle cart should be placed within 2 ft. of the curb
- Please keep 6 ft. of clearance between the recycle cart and other objects, especially mailboxes, vehicles and bulk items

Recycling

Bulk Items

Schedule

Drivers



(<http://www.johnsdisposal.com/site>)

About

Johns Disposal Service currently serves the counties of Dane, Jefferson, Kenosha, Milwaukee, Racine, Rock, Walworth and Waukesha. We are committed to providing the highest quality service possible.

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