

Managing “Recycling” Contamination

A Public Facility Perspective

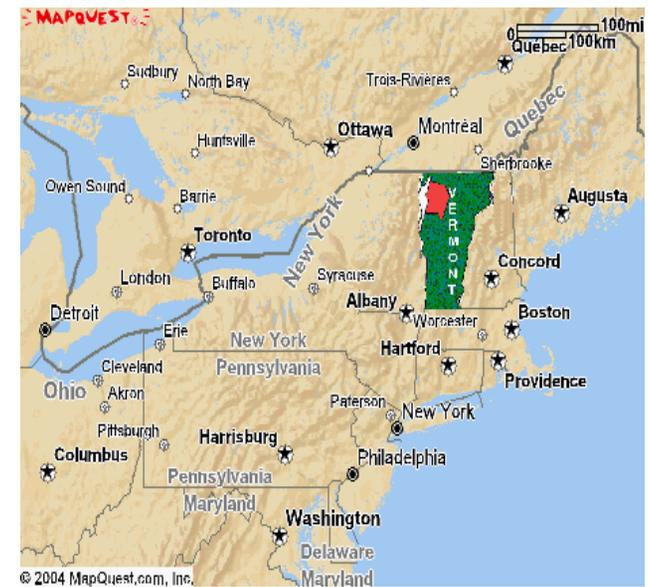
EPA Sustainable Materials Management Webinar
December 17, 2015

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Chittenden Solid Waste District - CSWD

- A County-wide municipality chartered by the Vermont Legislature in 1987
- Chittenden County has 18 municipal members
- ~160,000 population
- Mandatory Recycling since 1993



Presentation:

- MRF Facility
- MRF Data
- Educational Efforts



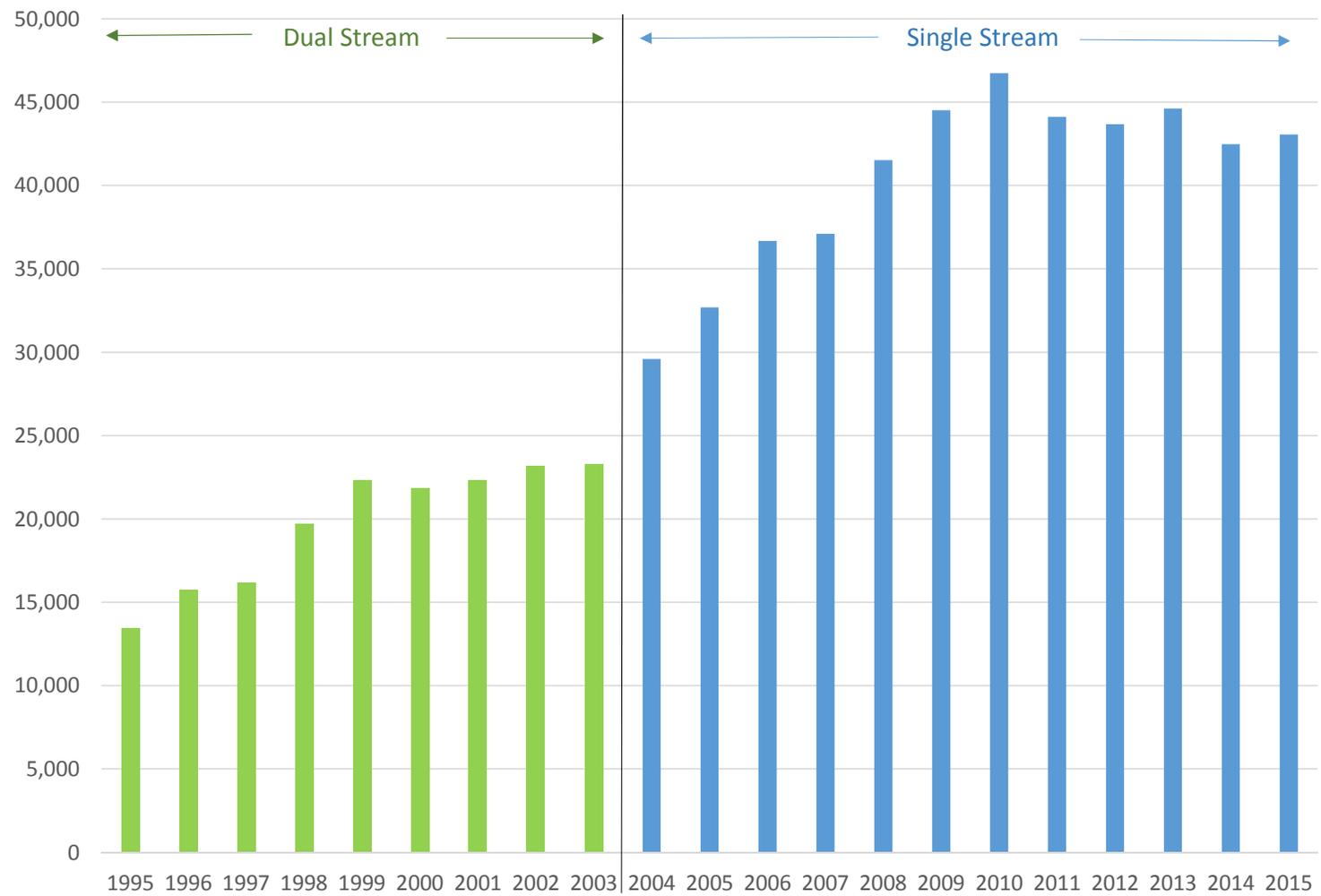
Evolution of CSWD's MRF

- 1993 – Built as a Dual Stream MRF
- 2003 – Conversion to Single Stream
- 2014 – Equipment Upgrade to Single Stream
- 2016 – Will Upgrade Glass Processing

MRF Operation

- CSWD Owns – Casella operates
- ~44,000 tons per year; ~23 tons per hour
- Incoming material – 60% in-County, 40% out-of-County
- Current Tip Fee = \$21.00/ton
- Current Weighted Average Commodity Sales = \$82/ton

Incoming Tons by Fiscal Year



Residue Rate

- Expressed as Tons Outbound MSW Divided by Total Tons Incoming
- Made up of two distinctive components:
 1. Incoming Contamination – well intended material as well as garbage
 2. Processing Residuals – Lost product: glass, PET, aluminum, paper

Residue Rate \neq (>) Contamination Rate

MRF Historical Data

Fiscal Year	Inbound Tons	Commodities Out Tons	MSW Out Tons	MSW Out ÷ Inbound
1995	13,445	11,800	310	2.3%
1996	15,735	13,962	683	4.3%
1997	16,157	15,596	681	4.2%
1998	19,733	18,650	1,073	5.4%
1999	22,304	20,713	712	3.2%
2000	21,852	20,926	815	3.7%
2001	22,341	21,266	958	4.3%
2002	23,167	22,147	1,109	4.8%
2003	23,310	22,513	877	3.8%
2004	29,592	27,711	1,299	4.4%
2005	32,706	30,535	1,799	5.5%
2006	36,677	35,704	2,042	5.6%
2007	37,120	34,941	1,979	5.3%
2008	41,520	38,030	2,399	5.8%
2009	44,529	42,284	3,128	7.0%
2010	46,750	42,956	3,638	7.8%
2011	44,126	39,164	3,904	8.8%
2012	43,688	40,381	3,868	8.9%
2013	44,623	39,895	3,888	8.7%
2014	42,494	40,465	3,374	7.9%
2015	43,061	39,940	2,424	5.6%
2016	19,157	17,309	1,095	5.7%
Grand Total	684,087	636,889	42,058	6.1% ← Total Residue Rate

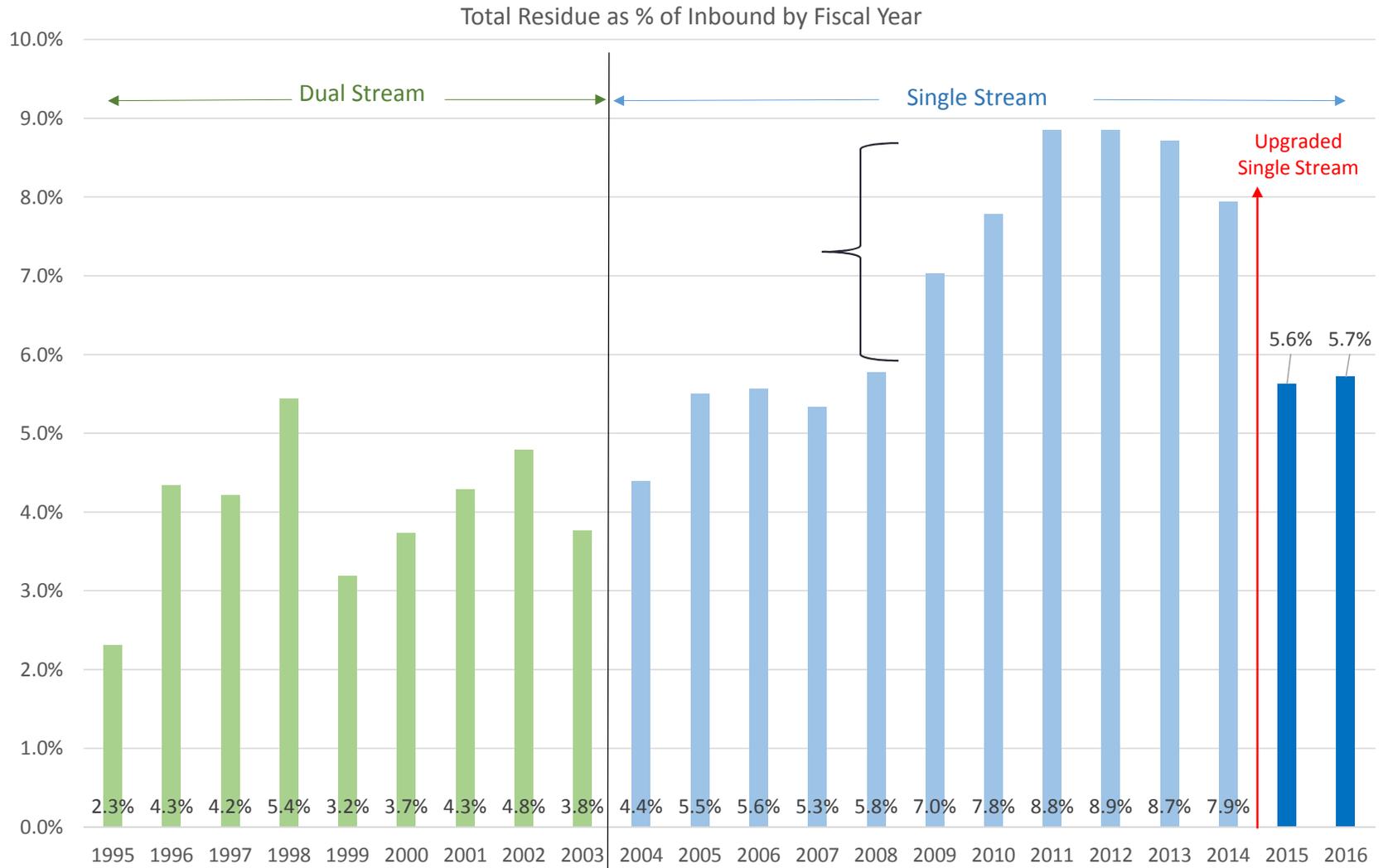
Below Average Contamination in our Bale Sorts



Locations in MRF for Removing Contaminants & Process Residue

- Presort – all contaminants hand sorted – from bowling balls to deer heads
- Fiber Line – hand sorted
- Pre-container Line – hand sorted
- Container Line - hand sorted
- Glass Processing Trommel – mechanically sorted*
- End of Process Trommel Screen – mechanically sorted *

* Mostly unrecovered product



Presort Contamination

.... Mostly plastic, with
an occasional bowling
ball, deer head or lawn
mower engine



Plastic Film from Fiber Line – multiple picks and multiple steps

Picking Station



Aggregation dumpster



Compactor





Contaminants from Container Line

(we currently sort out black plastic from our 3 thru 7 bales during this period of low market value)



From Glass Processing
Mechanical Sort

...appears to be mostly plastic
caps and corks but.....

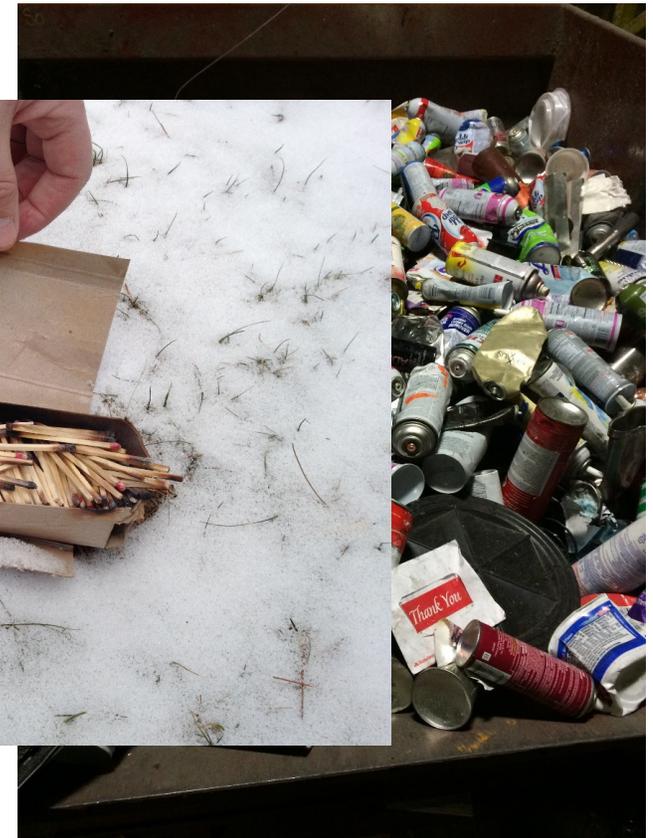


....by weight, most of it is unrecovered glass

...and some contaminants are dangerous!

Aerosols with hazardous waste

compressed gas cylinders



Contamination has a cost

- 85% of our residue is hand sorted as contaminants
- 15% of our residue is mechanically separated – mostly unrecovered product
- We figure a sorter gets about 60 picks per minute so in our MRF estimate that about 5 FTE's out of a sorting force of up to 30 sorters
- The disposal fees on our MRF contamination alone equates to a \$5.50/ton cost to haulers on our MRF tip fee.

Education, Education, Education – Multiple Methods

- 25 page guide book sent to all postal patrons in our county every other year
- Hauler: “Oops” stickers and bill inserts
- Periodic promotions for TV, radio and local papers
- Website
- Phone hotline open 9:00 to 4:00 each business day
- Social media Twitter, Facebook, Community Forums and newsflashes
- Outreach to residents, businesses and schools

2014-2016

“Where do I chuck this?”

The Reduce • Reuse • Recycle and Trash Disposal Guide for Chittenden County

CSWD | CHITTENDEN Solid Waste District | 872-8111 | CSWD.NET

Wise resource management for a greener Vermont.

SAVE FOR FUTURE REFERENCE!

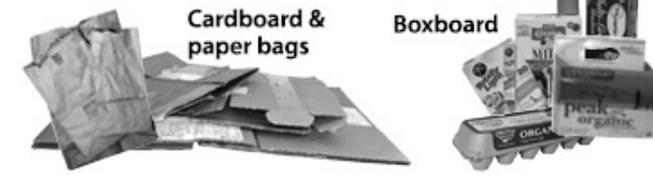
It's a fact: It takes less energy to manufacture products using recycled materials than it does to make them from raw materials freshly mined from the earth. You make a real difference when you recycle!

You can recycle all of these in your blue bin:



Remember the Rule of 2:
 Recyclables must measure
 - at least 2 inches on any 2 dimensions
 —and—
 - less than 2 feet on any 1 side.

rinse clean!



RECYCLE THESE MATERIALS IN YOUR BLUE BIN

	MATERIAL	ACCEPTABLE PRODUCTS
GLASS	Glass bottles & jars	Food and beverage containers only.
METAL	Aerosol cans	Non-hazardous, food-based products only are accepted in blue bins. Cans must be empty.
	Aluminum	Cans, foil, and pie plates.
	Metal cans	Food and beverage cans only.
PLASTIC	Rigid plastic containers & packaging	Minimum size: 2" on any 2 dimensions. Maximum size: 2' on any side. Bottles & jugs for foods, drinks, beauty products, detergents, etc. Dairy tubs (yogurt, sour cream, etc.), pails up to 5 gallons, take-out containers, flower pots and trays, and frozen-food trays. No plastic bags or Styrofoam!
PAPER	Boxboard	Empty cereal, shoe, and clothing boxes, 6- and 12-pack soda & beer carriers, paper egg cartons, dry-food boxes (pasta, rice, etc.), tissue boxes, paper towel and toilet paper cores, etc.
	Corrugated cardboard	Boxes with a wavy center layer.
	Envelopes & opened mail	Bulk-mail flyers; white, manila, colored, gummed, and window envelopes.
	Magazines, catalogs, & soft-cover books	Glue- or staple-bound publications, paperback books, phone books, etc.
	Newspaper	All sections and inserts.
	Paper bags	All colors.
	Shredded paper (In clear, plastic bags only)	Confidential documents.
	White & colored paper	Letterhead & copier paper, glossy flyers & brochures, file folders, kraft paper, manila folders, index cards, construction paper, non-metallic wrapping paper, tissue paper & cards.

UNACCEPTABLE PRODUCTS	PREPARATION
No light bulbs, dishes, Pyrex, drinking glasses, window panes, or ceramics.	Rinse clean. Remove lids; recycle plastic lids over 2" in diameter; discard smaller lids. Neck rings & labels OK. Recycle metal lids separately at Drop-Off Centers.
Must be completely empty. Deliver paint, cleansers, auto sprays, and other hazardous products to the Environmental Depot.	Separate caps from container. Recycle plastic caps over 2" in blue bin. Discard smaller caps. Do not puncture cans.
No aluminum with stuck-on food or grease.	Rinse clean.
No oil filters, hazardous material containers, bottle caps, or scrap metal.	Rinse clean. Labels OK. Lids OK placed inside cans.
No filmy, pliable plastic (grocery bags, bubble wrap, etc.); Styrofoam (take-out containers, cups, packaging blocks, peanuts, etc.); laundry baskets, sleds, housewares, office products, etc.; pesticide or automotive-fluid containers or electronics housing; or biodegradable plastics (PLA).	Rinse clean. Labels OK. <i>Do not include loose caps smaller than 2" in diameter in recycling containers. They will not be recycled.</i> Remove handles from pails. Recycle metal handles as scrap metal at Drop-Off Centers. Do not tie with string.
No detergent boxes, frozen- or refrigerated-food boxes, drink boxes, or milk or juice cartons. No paper plates or cups.	Empty and flatten. Remove and discard plastic liners. Recycle metal pour spouts as scrap metal at Drop-Off Centers.
No oil-, paint-, or chemical-stained, wet, unclean, or wax-coated cardboard. No strapping or string. No plastic, filmy, or foam packing materials.	Empty and flatten. Up to one cubic yard of up to 4-ft. sections accepted at Drop-Off Centers. Staples, tape, and labels OK. Pizza boxes must be clean.
No Tyvek or plastic envelopes. No padded mailers (bubble wrap, paper filling, etc.).	Remove & discard nonpaper enclosures (plastic cards, etc.) and strings. Labels OK.
No plastic wrapping, CDs, spiral or 3-ring notebooks, or plastic covers.	Must be clean and dry.
None that are soaking wet or contaminated with food, paint, oil, pet waste, etc. No plastic bags.	Must be clean and dry. Remove from plastic bags. Do not tie with string.
No plastic-coated or -lined bags. No animal food, wood-pellet, or kitty-litter bags.	Remove twine and plastic handles.
No shredded plastic, heat- or pressure-sensitive (NCR) paper.	Place in clear plastic bags and tie shut.
No pressure-sensitive duplication forms (NCR). No foil paper. No paper towels, facial tissue, or paper plates or cups. No stickers or sticker backing material.	Must be clean and dry. Remove plastic tabs, paper clips & metal hanging-file strips. Staples OK.

Detailed written explanation



Mandatory Recyclables • Banned from landfill disposal. No food residue. Items must be clean, empty & dry.

PAPER

* MUST BE EMPTY, CLEAN & DRY. *

NEWSPAPERS, MAIL,
OFFICE PAPER, ETC.



CARDBOARD & BOXBOARD



NO: Paper cups • “paper” made from Tyvek, plastic, or foil • padded mailers • spiral or 3-ring bindings • plastic bags • waxed paper • animal food or litter bags • paper towels & plates • stickers or sticker backing.

PLASTIC

* MUST BE EMPTY & RINSED CLEAN. *

BOTTLES, TUBS & JUGS



SINGLE-USE FOODWARE



NO: Food residue, filmy plastic (bags, wraps, bubble wrap) • durable items (toys, laundry baskets, housewares) • hazardous product containers • Styrofoam • utensils • compostable or biodegradable “plastic” items • caps or lids smaller than 2” across

METAL

* MUST BE EMPTY & RINSED CLEAN. *

CANS



ALUMINUM FOIL & PANS



NO: Food or beverage residue • propane tanks • batteries • scrap metal • jar lids • bottle caps • containers that once held hazardous materials • caps or lids smaller than 2” across

GLASS

* MUST BE EMPTY & RINSED CLEAN. *

BOTTLES



JARS



NO: Light bulbs • dishes • Pyrex • ceramics • drinking glasses • vases • window panes • mirrors • candle jars • plastic caps or lids smaller than 2” across • metal lids

Q: Why aren't plastic bags recyclable in my blue bin? **A:** They get tangled up in the recycling equipment, causing facility shutdowns. Many grocery stores accept them for recycling.

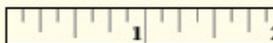
Q: Why aren't paper cups recyclable? **A:** They have an unrecyclable plastic or wax coating.

Q: Do I really have to rinse my plastic & glass recyclables? **A:** Yep. Recycling works because companies that buy recyclables to make into new products need those recyclables to be uncontaminated. Food & beverages are contaminants. **Hint:** Soak that peanut butter jar with rinse water from your dishes — it'll easier to clean.

Q: Why isn't Styrofoam recyclable? After all, there's a number on the bottom, right?

A: Pay no attention to the numbers! Not everything with a number is recyclable—and not everything *without* a number *isn't* recyclable. As for recycling Styrofoam, we don't produce enough in Chittenden County to make it economically or environmentally feasible to collect it and ship it to market. We recommend giving Styrofoam peanuts to local shipping companies or to those who regularly ship delicate items. For a list, visit cswd.net and search for “peanuts.”

NOTE: All items should be at least 2” on any 2 dimensions.



Recycling works!

Last year **you** helped keep **80 million** pounds of resources out of the landfill.

These Items are banned from your trash can — and your recycling bin!

FOR INFO, SPECIFICATIONS, FEES & FACILITIES, VISIT WWW.CSWD.NET • CALL (802) 872-8111 • E-MAIL INFO@CSWD.NET

Disposal options and fees vary - see **Facility Key** for where to bring these items.



APPLIANCES (major) • AC units, dehumidifiers, dryers, fridges, freezers, microwaves, stoves, etc.
FACILITIES: 1, 6, 7, 8, 9

ELECTRONICS • computers, monitors & peripherals • TVs • video game consoles • answering machines • MP3, DVD & CD players • VCRs



• stereo equipment • power supply cords
FACILITIES: 1, 6, 9 (Computers & TVs: 1, 2; other locations at vtecycles.com)



LEAVES & YARD DEBRIS

Trimnings • garden plants • mulches • grass clippings, etc.
FACILITIES: 1 (except Burlington), 3, 5

SCRAP METAL • larger than 8 cubic inches or weighing more than 1 pound.

FACILITIES: 1, 7, 8, 9



USED OIL

FACILITIES: 1 (limited), 2



TIRES

FACILITIES: 1, 7, 9

WOOD • clean lumber & natural wood (no paint, stain, chemicals, or glue.)

FACILITIES: 1 (except Burlington & Hinesburg), 5, 7, 9



Hazardous Waste

Leftovers with labels that contain the words "Warning," "Danger," "Poison," or "Caution" DO NOT belong in the trash.

Examples:

Automotive & engine supplies & fluids

Batteries lead-acid • nickel-cadmium • rechargeable • lithium

Cathode ray tube devices monitors • TVs

Home improvement supplies paints • stains • thinners • varnish • adhesives • tars

Household cleaners drain openers, etc.

Garden supplies fertilizers • pesticides

Gas cylinders

Mercury containing devices & lighting

FACILITY: 2

Construction & Demolition Debris (Architectural Waste)

State law Act 175 requires that the materials listed below must be reused or recycled if they meet ALL of the following specifications:

- Project is a commercial building OR is a residential building with two or more units.
- Project is within 20 miles of a facility that will recycle the materials listed below.
- Project will generate at least 40 cubic yards of any combination of the following C&D debris: *drywall, metal, asphalt shingles, clean wood, plywood, OSB (oriented strand board).*

If you have checked ALL boxes, then you cannot send this material to a landfill.

FACILITIES:

1 (except Hinesburg), 5 (clean wood only), 6, 7, 9

Business Food Scraps

State law Act 148 requires that generators food scraps and food residuals divert that material from the landfill if they generate at least:

- 52 tons/year as of July 1, 2015
- 26 tons/year as of July 1, 2016
- 18 tons/year as of July 1, 2017
- Any amount as of July 1, 2020

If you meet this minimum, then you cannot send food scraps to the landfill.

FACILITY: 3, 9

FACILITY KEY

Call ahead for hours, fees & specifications.

1. CSWD Drop-Off Centers • 872-8111

Locations in Burlington, Essex, Hinesburg, Milton, Richmond, South Burlington, Williston

2. CSWD Environmental Depot • 863-0480

1011 Airport Parkway, South Burlington

3. CSWD's Green Mountain Compost • 660-4949

1042 Redmond Road, Williston

4. CSWD Materials Recovery Facility • 651-5480

357 Avenue C, Williston

5. McNeil Wood & Yard Waste Depot • 864-7446

111 Intervale Road, Burlington

6. Reuse shops

Visit cswd.net for a list of retailers and organizations.

7. All Cycle (Casella) Transfer Station • 864-3615

220 Ave. B, Williston

8. Burlington Area Transfer Station • 878-3506 ext. 26

1496 Redmond Rd., Williston

9. Myers Recycling Center • 655-4312

Red Can Dr., Colchester

CSWD CHITTENDEN
SOLID WASTE DISTRICT

The mini disposal guide for
**Reusables, Recyclables
Compostables & Trash**
in Chittenden County

**Recycling: It's the law
in Vermont.**

It is illegal to throw recyclables
and other banned items away
as landfill-bound trash.

? Got questions about disposal options,
fees, and specifications?

Contact the Chittenden Solid Waste District
Phone: (802) 872-8111
E-mail: info@cswd.net
Visit: www.cswd.net

? Got questions about your curbside
pickup service?
Contact your hauler.



CSWD CHITTENDEN 872-8111
Solid Waste District CSWD.NET
1021 Redmond Rd., Williston, VT 05495
Printed on 100% post-consumer recycled paper

The Vermonter's Guide to

Recycling

ALL RECYCLABLES MUST BE EMPTY, CLEAN & DRY.

Metal



food aerosols only!

Glass



Paper



Plastic



Minimum size 2" inches on any 2 dimensions

NO paper freezer/fridge food containers
NO food • NO trash • NO plastic bags
NO Styrofoam • NO soiled paper

CHECK OUT THE FLIP SIDE...

Printed on 100% recycled paper—is it from your bin?

The flip-side of recycling:

These items DO NOT go in your blue bin.



NO Plastic bags or other filmy plastics. They are **not** recyclable in your blue bin. They tangle in our machinery. Many grocery stores accept them for recycling.



NO Styrofoam of any kind. Styrofoam is not recyclable in Chittenden County. Visit cswd.net for a list of businesses that accept Styrofoam peanuts for reuse.



NO Propane tanks & cylinders. To protect our workers, do not place these items in recycling bins. Bring them to CSWD Drop-Off Centers for proper handling.



NO Automotive or pesticide containers. Oil, antifreeze, and pesticide residues are contaminants. Place empty containers in the trash.



NO Food or food-soiled paper. Compost at home or bring kitchen scraps and uncoated, food-soiled paper to CSWD Drop-Off Centers for composting. We'll even give you a bucket for your compostables!



NO Bulky items or toys. We cannot recycle bulky items in recycling bins. Keep them out of the landfill if possible through reuse options.

WHAT IS RECYCLABLE? LOOK ON THE OTHER SIDE!

Recycling. It's what we do here. And it's the law!

Need a bin? Got questions about recycling?

Visit www.CSWD.net • Email info@CSWD.net • Call 872-8111

CSWD | CHITTENDEN
Solid Waste District

05/15

Fridge magnet

Saturation Ads in Local Papers

OIL & PESTICIDE BOTTLES
DON'T
WORK...
...IN YOUR
RECYCLING BIN OR CART!



Material remaining in the bottle can't be rinsed out safely.
This item is trash!
**Contact CSWD for info on responsible disposal of leftovers.*

CSWD CHITTENDEN CSWD.NET
 Solid Waste District 872-8111

RECYCLING PLASTIC BAGS
DOESN'T
WORK...
...IN YOUR
RECYCLING BIN OR CART!



They get tangled in our machinery. Recycle them at Hannaford, Shaw's, WalMart, Staples, or Price Chopper.
**Reusable bags are better!*

CSWD CHITTENDEN CSWD.NET
 Solid Waste District 872-8111

RECYCLING
DOESN'T
WORK...
...FOR
DRINK CARTONS!



Plastic coatings keep the paper fibers from separating for recycling. These items are **NOT** recyclable in this area.
These items are trash!
**Choose recyclable glass or plastic containers!*

CSWD CHITTENDEN CSWD.NET
 Solid Waste District 872-8111

RECYCLING
DOESN'T
WORK...
...FOR
STYROFOAM!



A number like this ♻️ on the bottom of a product only indicates the type of plastic it's made of, NOT that it is or isn't recyclable.
Styrofoam is NOT recyclable.
This item is trash!
**Why not use a travel mug?*

CSWD CHITTENDEN CSWD.NET
 Solid Waste District 872-8111




Thanks for recycling, but...

These items
DO NOT belong in your bin:
(Even if the item has this symbol )

- PLASTIC BAGS** or filmy plastic of any kind.
EXCEPTION: Clear bags containing shredded paper.
- BOXES FOR REFRIGERATED / FROZEN FOOD & BEVERAGES**
Milk cartons, juice boxes, butter, veggie & frozen meal boxes, etc.
- STYROFOAM** of any kind.
- FOOD OR CONTAINERS WITH STUCK-ON FOOD** Food is a contaminant. Containers must be empty and rinsed clean.
- METAL PARTS & PAINT CANS** Including lids or caps.
- NON-RECYCLABLE GLASS** Only food/beverage jars & bottles allowed. NO plates, glasses, ceramics, windows, etc.
- HAZARDOUS CONTAINERS OR SUBSTANCES** Pesticides, automotive fluids, oils, adhesives, paints, cleaners, etc.
- WOOD OR YARD DEBRIS**
- ITEM IS TOO BIG!** Max size for all items: 2 feet on any 1 side (boxes must be flattened)
- OTHER:**

Contact CSWD for info about what can go in your recycling bin.
(802) 872-8111 • info@cswd.net

CSWD CHITTENDEN Solid Waste District **(802) 872-8111** **CSWD.NET** 01/2015



CSWD @cswdvt · Nov 16

You asked "Does a pizza box go in recycling or composting?" Find out: ow.ly/KAZQx



[View summary](#)



Dan Barnes @metallidan · Aug 26

Weird. @FairPoint tried to #recycle this on our driveway, next time (why do these exist?) head to @cswdvt Ugh. #btv



← ↻ ❤️ 2 ⋮



CSWD @cswdvt · Sep 8

.@metallidan thanks for thinking of us! :)
Try this: yellowpagesoptout.com PS. that plastic bag is recyclable at #btv grocery stores!

LIKES

2



Resident tweet upset with unrequested phone book and that it was covered in plastic

Multi-Media Advertisements

WHAT DO THESE 4 ITEMS
HAVE IN COMMON?



ANSWER: **NONE OF THEM BELONG
 IN YOUR RECYCLING BIN.**

FIND OUT WHY AT **CSWD.NET**

CSWD | CHITTENDEN Solid Waste District 872-8111
CSWD.NET

Radio Ad



TV AD



Website

[Home - CSWD](#)
[CSWD Webpage](#)



CHITTENDEN SOLID WASTE DISTRICT
 |(802) 872-8111 | info@cswd.net
 Responsible Resource Management for Chittenden County, Vermont

Home A-Z List Locations & Fees Reduce & Reuse Recycling Composting Hazardous Waste Trash For Haulers About Us

Why these 4 things don't belong in your blue bin

Published on October 30, 2015 by Jonny

Not everything belongs in your recycling bin, but you already knew that (hopefully). Here are 4 things that don't go in your blue bin:



Plastic bags, kittens, styrofoam, and paper cups – none of them go in your recycling bin. (You probably already knew at least one of those!)

Here's why:

1 Plastic bags

Plastic bags and other filmy plastic get caught in the machines at the recycling facility where all of your recyclables go after they leave your blue bin. [Click here to watch a video on how it works](#). But all hope is not lost! Most grocery stores and big box stores accept plastic bags for recycling at their locations. The plastic film is sold to companies that manufacture things like plastic lumber. So, plastic bags *are* recyclable – **just NOT in your blue bin!**

2 Kittens

Categories

- Businesses
- Composting
- Events
- Facilities
- General Topics
- Household Hazardous Waste
- Job Openings
- Recycling
- Schools and Youth
- The CSWD Blog
- Waste Reduction



Other efforts to reduce MRF contamination

- Impose a fee for contaminated loads at MRF
- Outreach staff for special events, municipalities, schools and businesses

We have 3.5 FTEs for all of our outreach – including contamination



Hauler Contaminated Load



Questions?

Managing “Recycling” Contamination

A Public Facility Perspective

EPA Sustainable Materials Management Webinar
December 17, 2015

Tom Moreau
Chittenden Solid Waste District
tmoreau@cswd.net

.... Thank You for attending

