

## Chittenden County Solid Waste District, Vermont

On Tuesday, May 12, 2009, Common Council President Shawn Morris, Councilmember Cathy Fahey and several environmental advocates from the Capital Region, including Tom Ellis and Tim Truscott, visited the Chittenden County Solid Waste District (CSWD) in Vermont. The CSWD comprises 19 municipalities – including the City of Burlington. Burlington picks up its own recycling; everything else in the county is picked up by private haulers. The population for this region is about 160,000 people.



Each residential and commercial customer contracts with a private waste hauler, who uses trucks with two compartments: one compartment for trash and one compartment for recyclables.

CSWD employs a single-stream method of recycling, i.e. the papers, plastics glass and metal are not separated by the resident or commercial customer; recyclables all go into one bin. Private haulers provide curbside collection from subscribers and deliver goods for recycling to the CSWD facility. The private haulers must follow CSWD's rules and regulations or face being banned from participating in the recycling and solid waste program.

CSWD is looking at the possibility of "franchising" geographic areas of the solid waste district to different haulers as a means of reducing the duplication of truck traffic in the district.

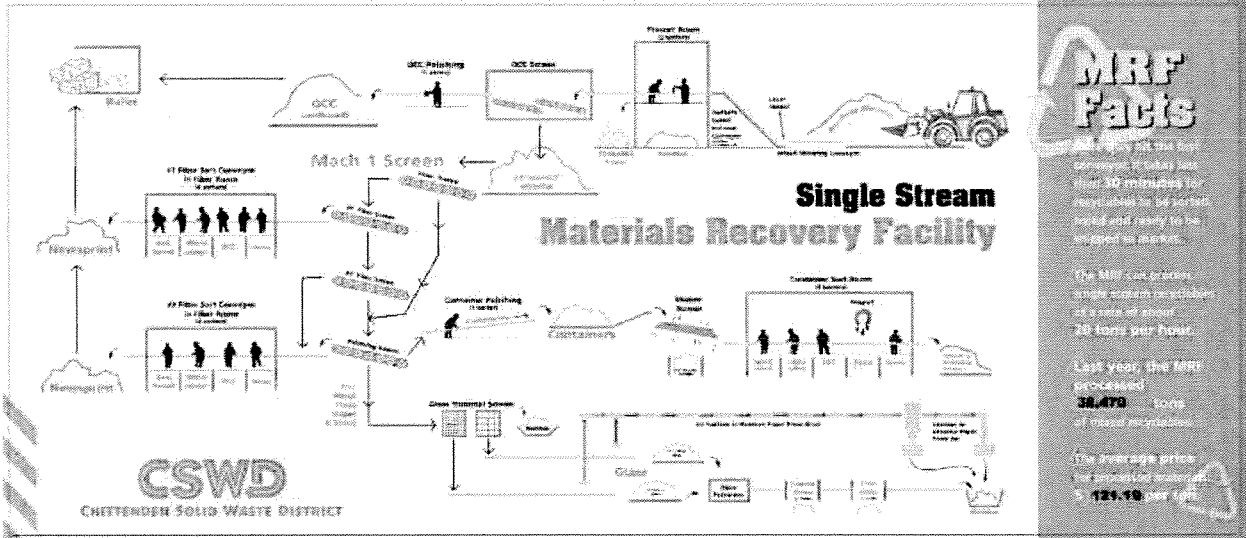
### Materials Recovery Facility



The tour began with a visit to the Materials Recovery Facility (MRF). CSWD oversees the MRF but contracts out the operations to Casella Waste Management. CSWD and Casella split revenues 50/50. According to their latest records, CSWD recycles 45,000 tons of paper, cardboard, aluminum, metal cans, glass and plastics number 1 to 7, with a residue rate of approximately 6.5%. They employ single stream recycling and a mechanical sorter with magnets and screens to separate out all the materials (with some hand sorting). In the future, they would like to move to an electronic sorter that uses lasers to identify objects after which a blast of air directs the object to be recycled into the proper chute or bin.

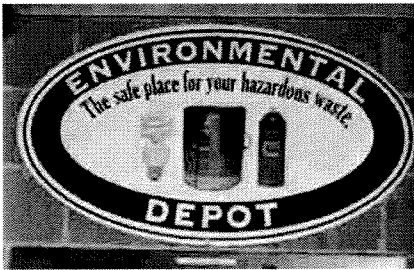
Not surprisingly, paper comprises the largest recycled commodity. CSWD ships out from four to eight tractor trailer loads of paper per day.

The process is as follows (see figure below):



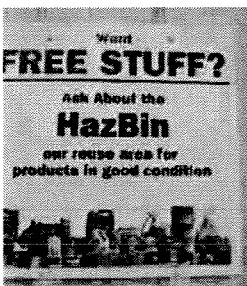
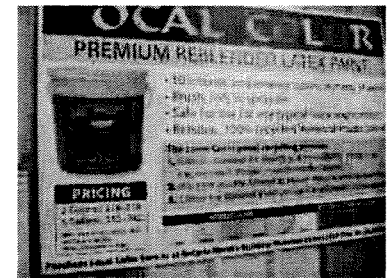
The cardboard, paper, plastic and metals are crushed, baled and sold. The glass that is collected is ground up into two different grades and sold for various civil engineering uses, including aggregate in the manufacture of asphalt. While the market dropped considerably this fall for recyclable materials (from a high of \$160/ton to a low of \$37/ton), it is coming back. CSWD reports a blended price of \$63.76/ton for the month of April 2009.

### Environmental Depot



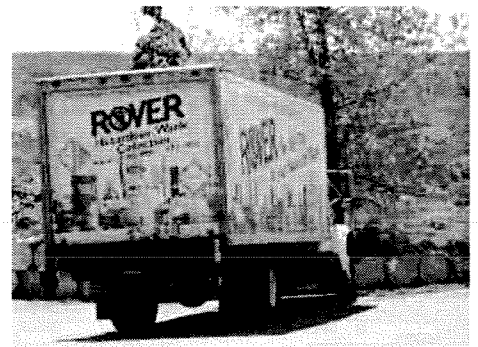
residential and commercial projects.

Our next stop was the Environmental Depot, which is the hazardous materials drop off and processing center. They are open 4 days a week for drop off. All material is inspected for reuse. Reusable paint is rebled and sold in 2 gallon and 5 gallon pails for



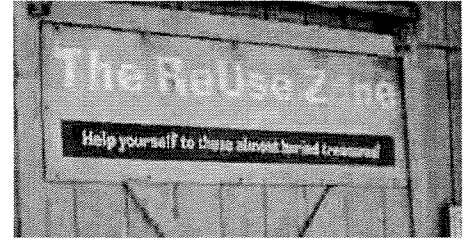
*There is a 'HazBin' for cleaning products and other materials that are partially used that anyone can pick up free of charge.*

*And a Rover Truck that picks up hazardous materials from the district's drop off locations.*



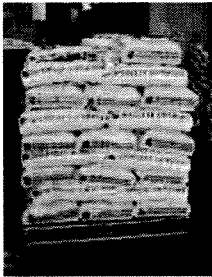
## Drop-Off Centers

"Drop off centers" are located throughout the county and provide a place for residents to drop off waste. There are distinct areas for recycling, yard waste, construction waste, appliances, textiles, books, light bulbs, batteries, oil, scrap metal, compostables, electronics and trash. One of the most interesting buildings was the "ReUse Zone" where visitors can help themselves to 'almost buried treasure.'

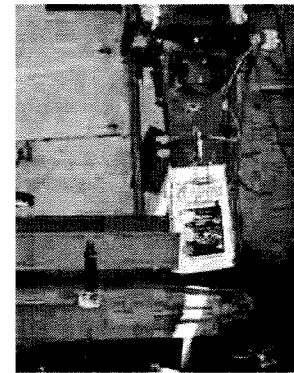


## Compost Center

CSWD runs a composting center. It was initially started 22 years ago as a collaboration between Garden Supply, a business, and Bernie Sanders, the then Mayor of Burlington in response to a VT state law to keep leaves and yard waste out of the landfill. Mayor Sanders and Garden



Supply created an agricultural area to dispose of the organic materials. They brought in manure to blend with the leaves. Eventually, it expanded to include food scrap components which were blended to make compost. Currently, CSWD collects food scraps from schools, businesses and institutions, and allows



for residents to drop off their household compostables. Commercial compost is picked up 4 times a week (approximately 3-7 tons per pick up). CSWD composts about 15,000 tons a year; the composting is bagged and sold, or sold by the yard.

## Education

CSWD relies heavily on education for compliance. They have three educators on staff: one for schools, one for businesses, and one for community sustainability. In addition, their staff throughout the county are educated and trained with respect to their jobs, whether it's as engineers, chemists, or environmental scientists. They provide a variety of informational material, from a website that provides detailed information to reports, posters, school curriculums, brochures, handouts, and tours.

Also, the CSWD regularly inspects the trash stream to determine how successful their efforts are.

## **Next Steps**

The trip to Chittenden County raised a lot of interesting issues for Albany residents and we look forward to scheduling a public roundtable discussion on the subject in the near future. Here are some particular areas that we identified as particularly important for the City of Albany to explore in detail.

1. **The diversity of items that are recycled** -- CSWD finds markets for virtually all its recyclables (see attached table). Although they certainly experienced the recent crash in the market, they maintained their relationships with recycling vendors, lost money on it for a while and now are seeing the market rebound. (According to CSWD, it was still financially beneficial to take the loss on recyclables rather than landfilling.) In addition, special efforts were made on composting and reuse of materials, from construction materials to old books.
2. **Enforcing recycling laws and ordinances on all levels of waste handlers** -- Everyone must recycle, there are no exceptions. Regardless of whether it is a public institution, government agency or private residence. The laws are written and they are enforced.
3. **Education** -- Achieving a high recycling rate among consumers requires education as well as enforcement. The materials and efforts we observed were professional and geared appropriately to the group for which they were intended.
4. **Convenience** -- From single stream recycling to strategically placed drop off centers to a focus on reusing materials, the district worked to make the process easy to use, convenient and available.

*This report was compiled by Council President Shawn Morris and Tim Truscott with input from Councilmember Cathy Fahey and Tom Ellis. May 2009.*

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MATERIALS	TONS/YEAR	AVG\$/TON	% BY WEIGHT	END USE	DESTINATION	COMPANY
Corrugated Cardboard	10,810	\$127.20	26.45%	Linerboard	Quebec, New York	Kruger, Solvay
#8 Newsprint	18,925	\$114.10	46.31%	Newspaper	Quebec, Maine	Kruger, Katahdan
Boxboard	1,806	\$87.85	4.42%	Toilet Paper Rolls, & Egg Cartons	Quebec, New York	Kruger, Solvay
White Ledger	70	\$207.53	0.17%	Writing Paper, Tissue	Montreal, Quebec	Kruger, Cascade
Other materials	69	\$0.00	0.17%	Comingled markets		
<b>RECYCLABLE PAPER</b>	<b>31,680</b>	<b>\$107.34</b>	<b>77.52%</b>			
#1 PETE Plastic Bottles	553	\$379.86	1.35%	Carpet, Bottles, & Clothing	Georgia, Quebec	Mohawk, Plastrak
#2 HDPE Plastic Bottles - Natural	337	\$746.73	0.82%	Plastic Bottles & Tyvek	North Carolina, Quebec	Envision Plastics, KW Plastics
#2 HDPE Plastic Bottles - Colored	384	\$506.98	0.94%	Plastic Lumber, Bottles, & Playground Equipment	North Carolina, Quebec	Envision Plastics, KW Plastics
#3-7 Mixed Plastics	507	\$42.26	1.24%	Plastic Lumber	Various locations	Generated Materials Recovery (GM R)
Ferrous Metal Cans	850	\$192.44	2.08%	Steel Products	Ontario	Triple M Metal
Aluminum	45	\$1,758.49	0.11%	Aluminum Cans	New York	Novelis
Glass - Aggregate	4,114	\$0.00	10.07%	Construction Projects	Vermont	
<b>RECYCLABLE CONTAINERS</b>	<b>6,790</b>	<b>\$516.86</b>	<b>16.61%</b>			
<b>RESIDUE</b>	<b>2,399</b>	<b>\$0.00</b>	<b>5.87%</b>	Landfills	Vermont	
<b>TOTAL (w/ the Residue)</b>	<b>40,869</b>		<b>5.87%</b>			
<b>TOTAL (w/out the Residue)</b>	<b>38,470</b>		<b>100.0%</b>			

## DID YOU KNOW?



Recycling aluminum cans uses 95% less energy than making cans from virgin material

It takes 25 plastic bottles to make a fleece jacket



Recycling one aluminum can saves enough energy to run a TV for three hours

Each ton (2000 pounds) of recycled paper can save 17 trees, 380 gallons of oil, three cubic yards of landfill space, 4000 kilowatts of energy, and 7000 gallons of water. This represents a 64% energy savings, a 58% water savings, and 60 pounds less of air pollution.



There are approximately 17,000 aluminum cans in one bale



A bale of aluminum cans weighs about 700 lbs. A bale of cardboard: 1,200 lbs; newspaper: 1,400 lbs; boxboard: 1,300 lbs; plastic: 1,100-1,200 lbs; office paper: 1,200 lbs; and steel: 1,600-1,700 lbs

It takes 3,200 lbs of hydraulic pressure per square inch to bale materials

The baler at the MRF uses a ram force of 424,000 lbs or 212 tons to make a bale