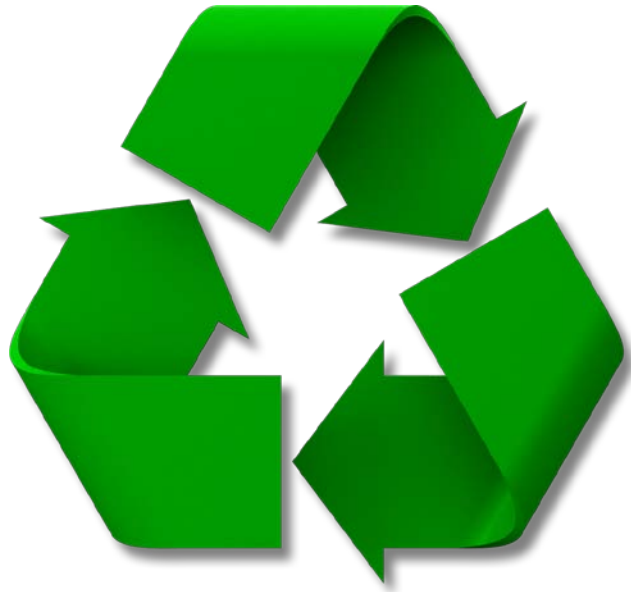


Division of Solid Waste Management

2013 Summary



Submitted to: Marcus J. Molinaro
Dutchess County Executive
Robert G. Rolison
Chairman of the Legislature

Submitted by: Lindsay Carille
Deputy Commissioner, Division of Solid Waste Management

Date: April 2014



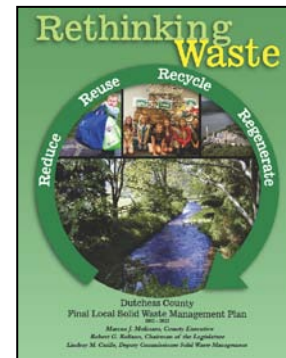
2013 Annual Summary

Dutchess County serves as the New York State designated local solid waste management planning unit. The Division of Solid Waste Management (Division), representing the Dutchess County Planning Unit, is responsible for the formulation and implementation of programs for the collection and disposal of solid waste generated within the County. Responsibilities include having a NYS Department of Environmental Conservation (DEC) approved ten-year Local Solid Waste Management Plan, biennial compliance reporting to NYS DEC, enforcement of Local Law No. 1 of 1984 Providing for the Management of Solid Waste Generated Within the County of Dutchess, Local Law No. 4 of 1990 Providing for the Mandatory Collection and Disposition of Recyclables in Dutchess County, and the Dutchess County Solid Waste Management Rules and Regulations.

The Division maintains liaison with the Dutchess County Resource Recovery Agency (RRA), who oversees the waste-to-energy facility (WTE), and county, state, and federal agencies in reference to the operation, maintenance and safety of solid waste facilities. The Division is currently staffed by a Deputy Commissioner, Compliance Inspector and Senior Program Assistant.

In April of 2013, the Dutchess County Local Solid Waste Management Plan, *Rethinking Waste*, was adopted by Dutchess County Legislature and subsequently approved by New York State Department of Environmental Conservation (NYS DEC) June 2013. The ten-year plan for the management of solid waste has three main goals:

- Decrease solid waste generation;
- Increase reuse and recycling; and
- Convert the remaining waste to electricity and minimize the use of landfills for solid waste disposal.



RECYCLING, COMPOSTING AND REUSE

Recycling Rate:

A recycling rate is determined by totaling the amount of Municipal Solid Waste (MSW) and Construction and Demolition (C&D) debris disposed of, then totaling the amount recycled, and dividing the recycled amount by the combined total.

$$\text{Recycling rate} = \frac{\text{Total Recycled}}{\text{Total (Recycled and Disposed)}} \times 100$$

This sounds pretty simple, but to quote a line from an article on recycling rates, “Published recycling rates have long been slurred as white lies at best, and pants-on-fire at worst.”¹ The methods and materials that are counted as recycling differ among planning units and states, and many do not publish their rates or what goes toward their recycling numbers. Planning units that publish rates generally include materials with a Beneficial Use Determination (BUD)² as recycling. Some examples are composted biosolids and materials used as alternate daily cover (ADC)³ for landfills. ADC materials include C&D debris and waste-to-energy ash. While it is customary for planning units to count materials used under BUDs as recycling, with very few exceptions, NYS DEC does not count BUD materials toward the New York State MSW recycling rate and requests that these

materials not be included on the NYS DEC Annual Report Form – Planning Unit Recycling Report (DEC Report). Therefore, not all solid waste numbers in this report will directly match those on the submitted 2013 DEC Report.

Dutchess County is one of the few planning units in New York with a waste-to-energy facility (WTE). Neighboring Westchester County, also with a WTE, has a 52% recycling rate. The data reveals that materials counted as recycled include the WTE ash and C&D debris that is used as ADC. Westchester, arguably correct, counts ash reused in a beneficial manner as recycling, as do other counties and states, such as California and Maryland.

Some states also allow all wastes that are incinerated and converted to electricity to be counted as recycling (such as Florida), or a percentage of the incinerated wastes to be counted toward diversion goals (such as California).

Most planning units combine MSW (“regular” garbage from non-industrial sources), and C&D debris (primarily waste from construction sites), together to determine a recycling rate. Including C&D debris generally increases the rate, as a large percentage is used as ADC and counted toward recycling.

Since the determination of recycling rates varies so widely across the country, the Division of Solid Waste Management had to choose what to include in the reported rate, and has determined it will be reported several ways as outlined in the following table:

- Rate for MSW only;
- Rate for MSW and C&D debris combined; and
- Rate when including waste-to-energy ash used as ADC (100% for Dutchess County), as recycling.

As stated above, these rates will not match the recycling rate of the DEC Report, as recyclables that are reported to DEC directly, such as materials from the Returnable Container Act and data from Vehicle Dismantler Facilities, or are part of a Beneficial Use Determination such as C&D debris used as ADC, are not included in the DEC Report. These materials makeup part of the County’s recycling rate, but DEC receives these numbers at the state level and directs individual planning units to not include them in the DEC Report.

The combined rate, including counting BUD materials as recycling, is most comparable to published rates from other counties.

Rethinking Waste Projections and Actual Rates					
	2010	2012 Projected	2012 Actual	2013 Projected	2013 Actual
MSW only recycling rate	22.9%	24.6%	31.1%	28.2%	31.8%
MSW and C&D debris recycling rate	26.4%	27.6%	38.6%	31.6%	40.5%
Combined recycling rate with ADC ash*	N/A	N/A	51.9%	N/A	53.7%
* Ash used as ADC and ferrous metals were included in the recycling total and subtracted from the MSW incinerated total, to avoid counting this material twice.					
N/A = Not applicable.					

The increases in the recycling rate since the publication of *Rethinking Waste* are due to several factors:

- A dedicated effort to identify recycling previously not counted. Recycling not counted before includes containers recycled through the bottle bill act, vehicles dismantled and recycled, scrap metal recycling, and recycling that is self-hauled out-of-state by commercial and industrial entities;
- By mid-2013 all curbside recycling was single stream, making recycling easier and therefore increasing the amount recycled. The jump in recycling due to single stream recycling was first identified in 2012.

It should be noted, the final numbers and recycling rate in this report only reflect what is reported to the County. Waste and recycling data from entities using unlicensed haulers, those who self-haul materials and have not been identified, or those who did not respond to our data requests, cannot be determined or estimated.

Residential recycling rates for all the individual municipalities cannot be determined, as only four municipalities have municipal collection services, three have contracted with a private company for municipal-wide residential collection services, and the residents of the other 23 municipalities are serviced by private haulers through individual contracts and/or transfer stations.

County-wide, 87,647 tons of the total 274,752 tons of MSW generated is recycled. 146,581 tons are converted to electricity (6,213 tons of this are metals which are recovered and included in recycling), 42,472 tons are landfilled by private haulers, and 4,265 tons are incinerated at the Westchester County WTE by private haulers.

Organics Diversion:

The diversion of food scraps, leaves and brush for composting is an essential part of recycling, and increasing food scrap diversion is a critical component to increasing the County's recycling rate. Most municipalities collect brush and leaves on a seasonal basis, either curbside or through drop-off locations. The amount of leaves and brush composted at the municipal level is unknown, as most do not track volume. The Division's recommended method of disposal for leaves and grass clippings is mulching (leaving them on the lawn), or through backyard composting.

Currently there are no residential programs for food scrap diversion. There are several institutions that do divert food scraps from the waste stream, and the number has increased since the adoption of *Rethinking Waste*. In 2013, over 1700 tons of food scraps were diverted. The following data, which is not all-inclusive, was reported to the Division for 2013:

- As noted in *Rethinking Waste*, all of the area colleges have robust recycling/sustainability programs, including food scrap diversion. Vassar College and the Culinary Institute of America contract with private haulers to transport their organics to a private composting facility, and Bard College composts onsite. Over 500 tons of food scraps were diverted by the 3 colleges last year. Marist College recently installed a food pulper/dehydration system, which pulps and dehydrates food scraps, producing minimal residue which is sent to a water treatment plant.
- Stop & Shop grocery stores, in addition to recycling over 1,600 tons of cardboard and plastics, diverted over 370 tons of food waste from the six stores in Dutchess.

- The Omega Institute has an aggressive sustainability program and diverted over 120 tons of food waste last year.
- McEnroe Organic Farm, the only composting facility in the County that can accept food scraps, composted over 3,000 tons of food scraps and yard waste (from both in-county and out-of-county sources) in 2013.
- Zero to Go, a company in Beacon, collected and composted approximately 3 tons of food waste from local restaurants and local special events. The main mode of collection was done by bicycle.

Working with Cornell Cooperative Extension of Dutchess County Agricultural and Horticultural program staff, backyard composting was promoted through demonstrations and events. In 2013, Cornell trained over 140 residents on how to construct a compost pile, and reached over 900 individuals at the Dutchess County Fair booth, which included a display on composting.



Construction and Demolition Debris Recycling:

There are several in-county facilities that recycle construction and demolition debris, such as asphalt, concrete, brick, and clean wood. In 2013, of the more than 87,000 tons of C&D debris generated, over 41,000 tons of C&D debris was recycled and over 17,000 tons was used as ADC, according to facilities that provide reports to the Division.

Reuse:

One of the best ways to reduce the amount of trash that is landfilled or incinerated is reuse. Reusing materials, rather than throwing them out, reduces waste and can provide others needed clothing and goods. Materials that can be reused include clothing, furniture, tools, books, and more. It is estimated that the average person throws away about 70 pounds of clothing per year, which for Dutchess County would mean over 20 million pounds per year. There is no need to throw these materials in the trash. Even textiles that can't be reused are sold for recycling and turned into other products, such as wiping cloths or carpet padding.

There are numerous thrift shops, consignment shops, and second hand shops that take materials and resell or donate the materials to others. On the County's website, the [Division of Solid Waste Management](#) web page explains the differences in types of shops and provides a list of thrift shops in Dutchess County. There are also companies that offer fundraising opportunities through collection of donated clothing and shoes.

Staff did reach out to several thrift shops in Dutchess County for 2013 data, but with limited success. One of the largest thrift shops in Dutchess County, Goodwill Industries of Greater New York & Northern New Jersey, whose income supports nonprofit programs, did provide donation bin totals for the Wappingers Falls store. In 2013, over 3,583,500 pounds (over 1700 tons) of donations were received!

There are so many donation opportunities in Dutchess, it has been difficult to determine how much is actually donated, and hard to identify how much of the materials are ultimately recycled. Increased efforts in the collection of data to determine how much is recycled will be one of the tasks in 2014.

In a reuse and recycle County project, thirty car wash barrels were obtained for free from Woodman Car Wash, and the DPW Highway Sign Shop printed Dutchess County



Recycles stickers for the barrels. The recycling barrels will be used by DPW Parks to increase can and bottle recycling in County parks.

FACILITIES

Recycling:

The County does not operate a materials recovery facility (MRF). The RRA oversaw a dual-stream MRF for the County in a county-owned building from 1990 through 2012. The operation was shut down at the end of 2012 and the buildings and equipment sold in early 2013. Approximately 85% of the County's single stream recycling (plastics, metals, and paper/cardboard) is processed at ReCommunity Beacon, a privately-run single stream facility which opened in 2012.

Transfer Stations:

The County currently has 19 transfer stations, which are facilities where MSW is unloaded from residents' vehicles and briefly held until transfer to the end point of disposal: a WTE, landfill or recycling facility. Three transfer stations are privately run, six are run through contract with a private company, and ten are municipally-run. Not all municipalities have a transfer station, and not all transfer stations accept residential garbage. County residents in fifteen municipalities have the choice of using a transfer station and/or contracting for curbside pick-up.

Composting:

There are several private facilities in-County that process yard waste, clean wood, and manure for compost, and in 2013 over 10,000 tons of organics were composted. Currently there is only one in-county facility that is a NYS DEC Permitted⁴ operation to compost food scraps in addition to yard waste and manure, McEnroe Organic Farm.

In 2013 NYS DEC granted a Registration⁴ to a local farm to expand their composting by adding coffee grounds from a local coffee retailer, and there is currently a proposal for an anaerobic digestion system at a local farm.

Resource Recovery Agency (RRA) operation of the Waste-to-Energy Facility (WTE):

The RRA oversees the WTE operation with a staff of five full-time employees. A private company, currently Covanta, operates the WTE. The facility, in operation since 1989, provides stable, long-term employment at a relatively high wage to over forty people.

The 1984 agreement between the RRA and the County provides for a Net Service Fee (NSF) to be paid, based upon a formula outlined in the agreement, if the expenses of the RRA exceed revenues. In 2012 a NSF was required in the amount of \$4,135,796. In 2013, the required NSF decreased to \$1,328,142 (the October – December amount has not been audited yet), mainly due to the retirement of the Agency's 1999 Bonds.

Of the MSW that was generated in Dutchess County, but not recycled in 2013 (excluding the metals recovered), the WTE processed 146,581 tons. This represents approximately 76% of the total tons of MSW that is disposed. 22% of the total tons of MSW were landfilled, and 2% of the total tons of MSW were incinerated at the Westchester County WTE.

Therefore the MSW processed at the in-county WTE avoided the need to transport over 146,000 tons of waste to distant landfills. Using an average round trip of 500 miles per trip to the nearest landfill, and 30 tons of MSW per truck, at an average of 6 miles per gallon of diesel per 18-wheeler, approximately 407,166 gallons of diesel fuel was not burned, avoiding over 6,870,023 tons of CO₂ emissions.⁵

The MSW processed at the WTE is converted to electricity and sold to Central Hudson. In 2012 a net of 48,445 megawatt hours (Mwhs) was generated, and in 2013 a net of 33,607⁶ Mwhs was generated. The facility can turn 450 tons of waste into 9.3 megawatts (MW) of renewable power every day, enough to power over 10,000 homes. The facility uses a small portion of the gross Mwhs generated to operate the facility.

The facility recovered 6,213 tons of recyclable metals in 2013. These metals would otherwise have been lost forever in a landfill. The RRA also provides recycling containers onsite for all residents to use, and in 2013 collected 131 tons of recyclables.

The RRA hosts eight Household Hazardous Waste Events every year. In 2013, 990 residents attended the events resulting in the recycling of 22,482 gallons of chemical waste, 70,906 pounds of electronics, 1,383 pounds of fluorescent bulbs, and the safe disposal of 532 pounds of pharmaceuticals. The RRA also provides safe disposal of pharmaceuticals for local law enforcement agencies and to other counties. In 2013 over 3,700 pounds of additional medications were incinerated. These events are partially funded by DEC, and the costs for the events were approximately \$62,500, with expectation of 50% reimbursement by DEC. Also, the current operator of the WTE facility has a program where residents are given a \$5 Home Depot gift card when mercury containing products, such as fluorescent bulbs, are brought to the events; 192 gift cards were given out in 2013.

2013 Accomplishments

- The Division supervises the issuance of permits and licenses as may be required of haulers, and enforces Dutchess County's Local Law No. 1 of 1984, Local Law No. 4 of 1990, and the Solid Waste Management Rules and Regulations. In 2013 the Division renewed 14 licenses, which were due to expire, and processed four (4) new license applications, granting two (2) new hauler licenses for a total of 18 licensed haulers and \$15,000 in licensing fees collected.
- The Compliance Inspector, hired January 2013, identified 31 occurrences of unlicensed haulers, conducted over 65 recycling compliance inspections, responded to three (3) non-recycling complaints, and answered over 50 solid waste management questions while in the field.
- Staff answered over 160 information requests, sent 23 letters to haulers operating illegally in the County, and sent 10 letters to haulers advertising they operate in the County but are not licensed.
- Promotion of single stream recycling and waste audits were conducted at eight County buildings, resulting in disposal costs savings of over \$23,000 per year.
- Staff developed and/or published:
 - A [Dutchess County Recycles](#) brochure;

- [Recycling Complaint](#) form;
 - Expanded and updated [Solid Waste Management website](#);
 - eNewsletter about recycling, [Rethinking Waste: A New Age of Recycling](#);
 - Greenway Guide, [Recycling and Waste Collection](#) site specifics.
- Staff met with licensed haulers, various towns, various commercial entities, and the General Manager of the Dutchess County Fair concerning recycling and organics diversion. In 2013 the DC Fair initiated organics diversion in the Horticulture building and piloted a food scrap diversion composting program at the Sheep and Wool Festival.
 - Staff worked with Cornell Cooperative Extension to promote backyard composting and organics diversion through several presentations, including the DC Fair.
 - Staff participated in recycling events, including an Earth Day clean-up and recycling event at the County Office Building.



Dutchess County Executive Marc Molinaro and several county employees in front of the Dutchess County Office Building on Market Street following a cleanup effort around the county government campus to celebrate Earth Day. Employees collected four bags of trash and three bags of recyclable materials.

¹ Powell, Jerry. "Death to Recycling Rates." *Resource Recycling* March 2011: Pages 22-24. Reprint.

² A BUD is a jurisdictional designation made by DEC in regard to a material that has been used and is no longer usable for its original purpose but can be directed to an alternative use considered to be beneficial compared to disposal.

³ ADC means cover material other than earthen material placed on the surface of the active face of a solid waste landfill at the end of each operating day to control vectors, fires, odors, blowing litter, and scavenging.

⁴ NYS DEC has regulations regarding whether a facility is "Exempt," "Registered" or "Permitted," depending on the amount of materials and the types of materials that are accepted at the facility.

⁵ AfterOilEV calculator tool.

⁶ In 2013 there was a mechanical failure to the turbine and no electricity was produced for approximately 3 months.