



Estimates of Connecticut Municipal Solid Waste (MSW) Generated, Disposed, and Recycled FY2011

The following MSW statistics are based primarily on data reported to the Connecticut Department of Energy and Environmental Protection (DEEP) by Connecticut municipalities and by Connecticut permitted solid waste facilities¹. A listing of data qualifiers can be found at the end of this webpage ([click here](#)).

MSW disposed includes regular trash generated by both the residential and non-residential sectors. It does not include construction and demolition wastes, industrial sludges, or land-clearing debris. MSW recycled includes: [CT designated recyclable items](#) ; other types of MSW recyclables (e.g. food waste, yard waste brush and tree trimmings, 3-7 plastics, textiles, anti-freeze; etc.); and material reported reused through municipal swap areas.

Questions? Contact [Judy Belaval](#) at the DEEP Bureau of Materials Management & Compliance Assurance (860) 424-3237

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Figure 1 - Summary – Connecticut (CT) MSW Reported Generated, Disposed, and Recycled¹ FY2011 (July 2010 - June 2011)

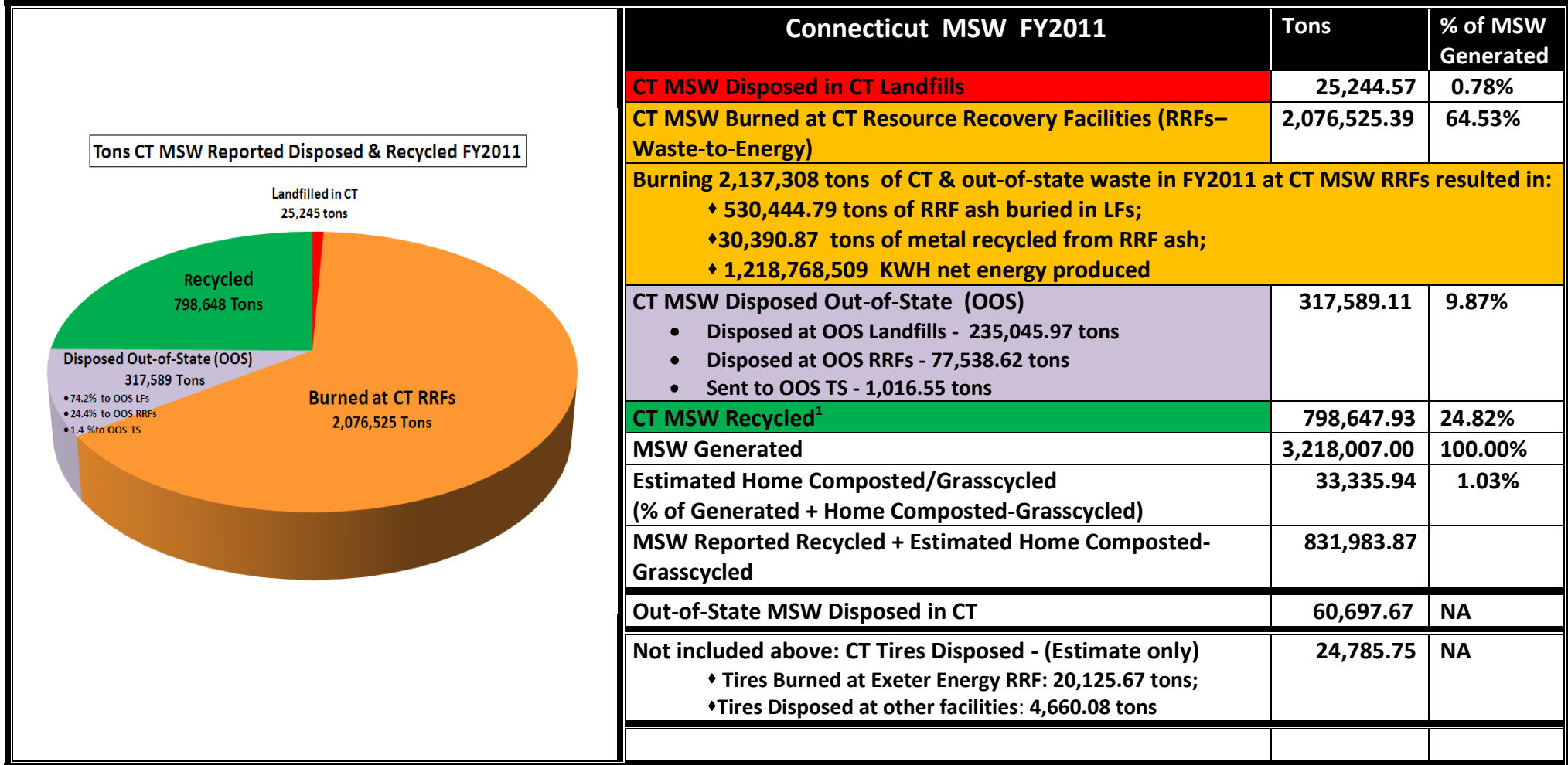
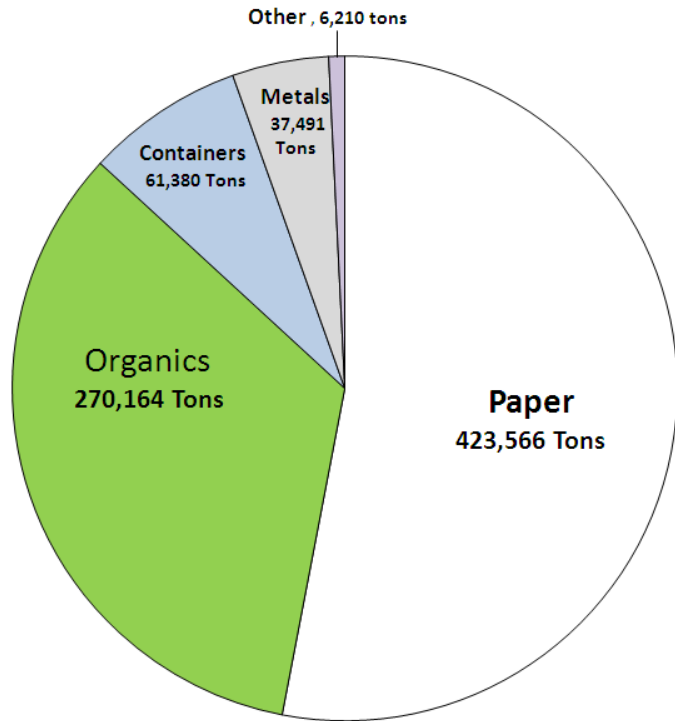


Figure 2 - Summary - Types of Connecticut MSW Reported Recycled¹ FY2011

Tons MSW Reported Recycled FY2011

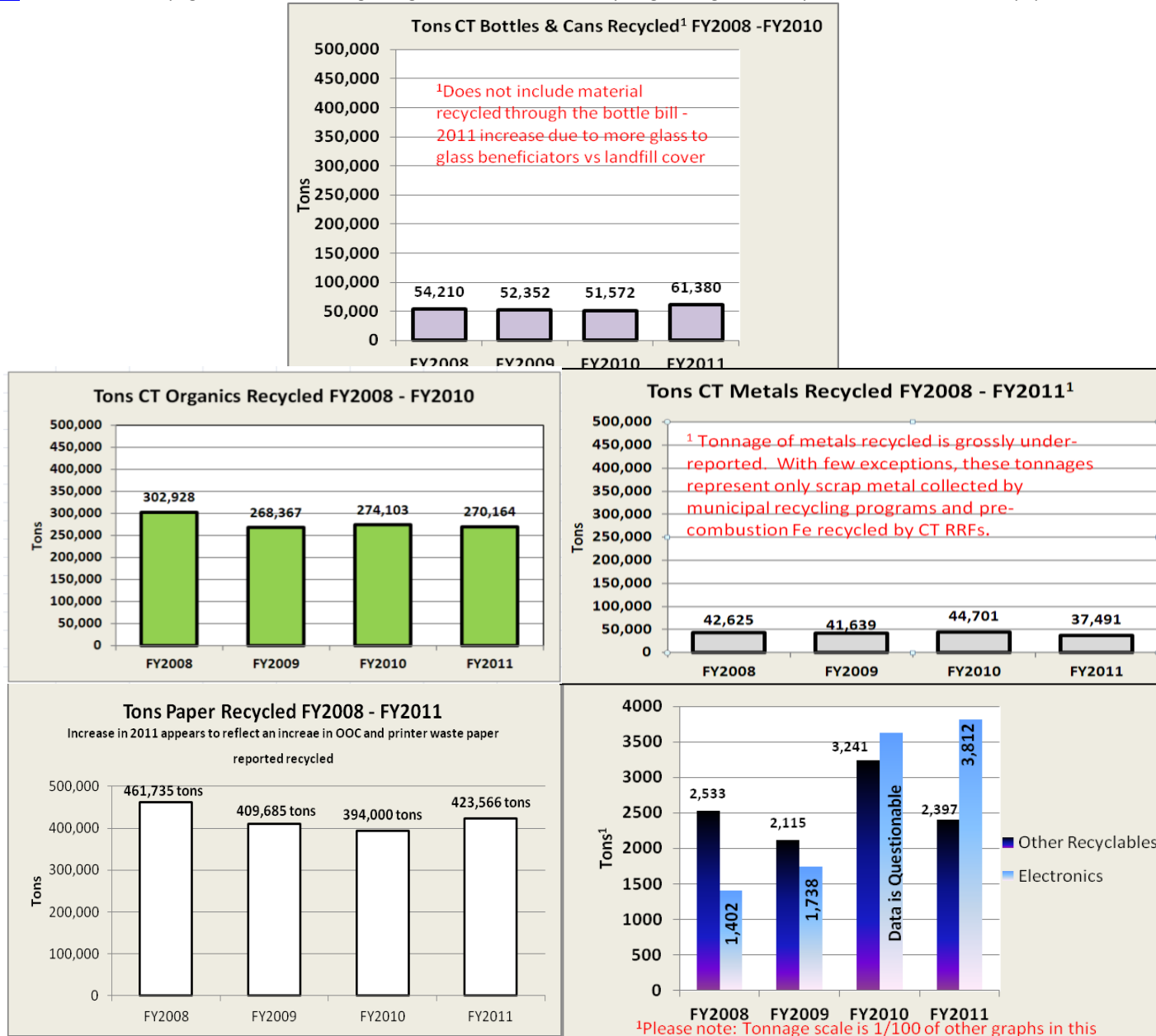


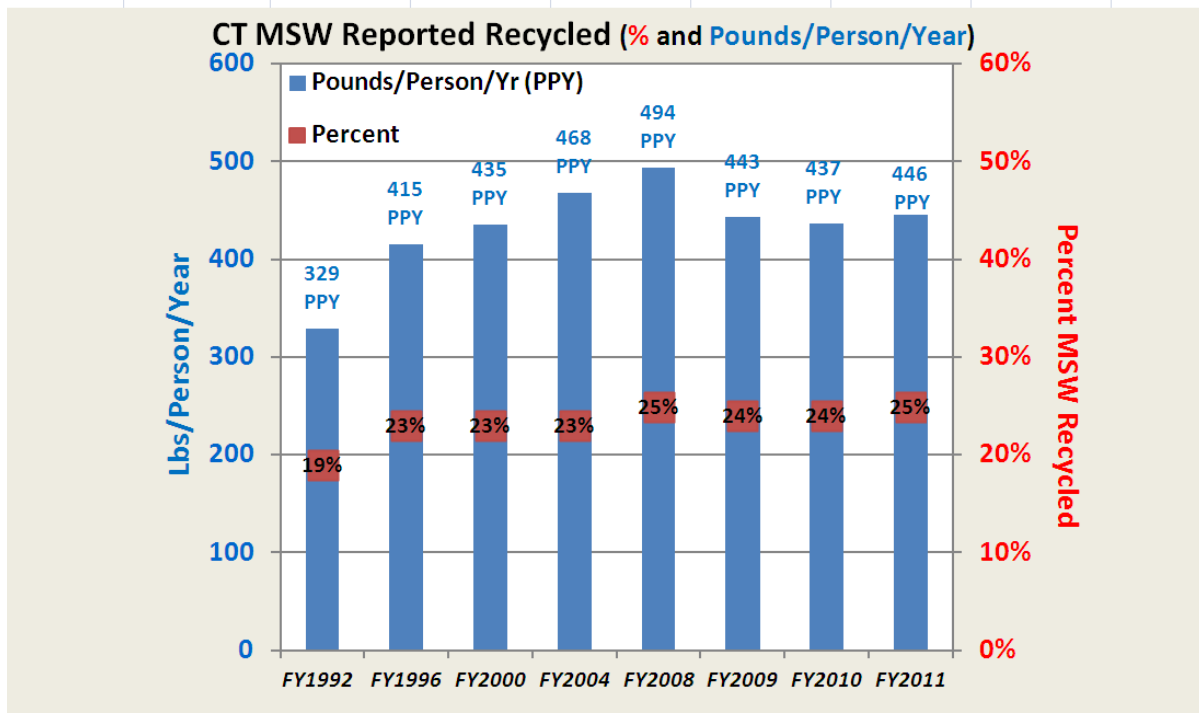
Material Type Reported Recycled	Tons Reported Recycled FY2011	% of MSW Recycled
Paper (represents tons marketed)	423,565.83	53.02%
Organics (represents pre-compost weight-not weight of final products)	270,163.56	33.82%
Containers (bottles & cans) – (represents tons marketed) Grossly under-reported. Doesn't include most of the material recycled through the CT bottle deposit law infrastructure	61,379.62	7.68%
Scrap Metal (represents amount collected for recycling mostly by municipal scrap metal programs (minus 15% for residue.) Does not include most of the scrap metal recycled by commercial, private, or institutional sectors.	37,491.13	4.69%
Other – electronics (3,812 tons), waste oil, batteries, etc. (represents tons collected for recycling mostly through municipal programs. Does not represent tons marketed)	6,209.69	0.78%

¹CT recycling tonnages presented above are conservative figures, since they **do not include**: (1) most of the glass, metal, and plastic recycled through the CT bottle deposit law infrastructure;(2) automobile scrap metal; (3) waste oil recycled by businesses or garages; (4) storage batteries recycled through the CT storage battery deposit infrastructure; (5) much of the commercially recycled electronics, scrap metal, etc. ; (6) material recycled by direct haul from generator to end market or to out-of-state destinations since these tonnages may not be represented in the reports submitted to the DEEP.(It is anticipated that some of these tonnages will be tracked in the future under new hauler reporting requirements.)

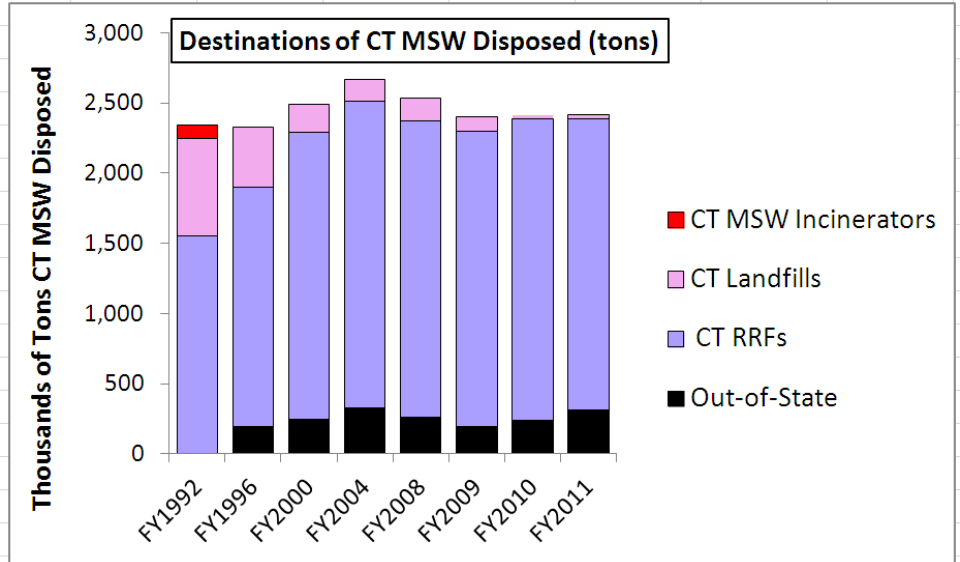
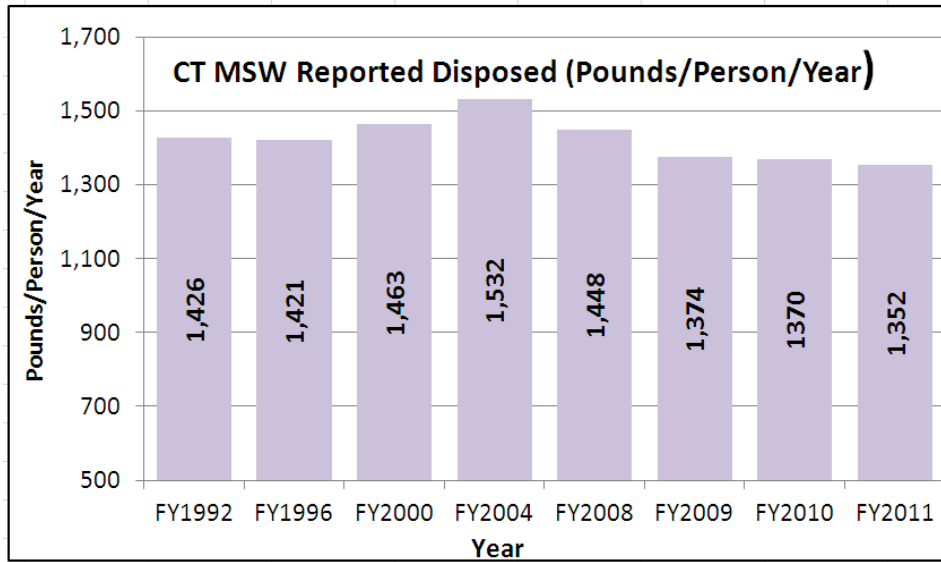
Glass aggregate reported used as alternative landfill cover is not counted as recycled and is not included in the recycling tonnages presented above.

Figure 3 – MSW Reported Recycled and Disposed – Historic Perspective (State-wide recycling tonnages for bottles, cans, and paper are based mostly on recycling facility marketing reports; recycling tonnages for other materials are based mostly on municipal annual recycling reports. Disposal tonnages are based on transfer station, landfill, and RRF reports.)¹Please refer to [data qualifiers](#) at end of this webpage for information regarding under-estimation of recycling tonnages for scrap metal; bottles, cans and paper; electronics; batteries; etc.





The economic downturn of fall 2008 contributed to a reduction in FY2009 (July 2008-June 2009) of both the CT MSW percapita disposal rate and in the CT MSW percapita recycling rate. The lower rates continued in FY2010 and FY2011. However, because both the amount disposed and the amount recycled dropped, the FY2009, FY2010, and FY2011 percent of MSW recycled remained constant.



Factors related specifically to recent amounts of material recycled include the following:

- **Economic Factors**
 - Prior to the 2008 economic downturn demand for finished product was at an all time high and as a result, so was the demand for feedstock (including recyclables) used to manufacture those products. Often manufacturers and paper mills were forced to accept poorly prepared recyclables in order to meet the increased demand for their products.
 - In 2008, when the demand for finished product dropped due to the poor economy, manufacturers and paper mills (especially those in China) either stopped buying recyclables and/or became more selective about the quality of the recyclables they were purchasing. Recycling facilities that were churning out poorly processed recyclables could no longer market their material. Those recycling facilities that had maintained the quality of their recyclables during times of greater demand, were able to market their recyclables, albeit at a lower price.
- Many recycling markets experienced a slight rebound in FY2010 and FY2011. However ***in FY2013 China implemented a program at Chinese ports known at “green fence”*** (see article in [The Christian Science Monitor](#)) and started rejecting loads of recyclables which contain unacceptable levels of contamination. This program has negatively impacted mainly those U.S. recycling processors which send a large percentage of their recyclables to China without really preparing the recyclables to meet market specifications. It remains to be seen how long operation green fence will continue and how that [will affect the way recyclables are collected and processed in t he U.S.](#)
- **Changing Nature of Waste Streams:**
Over the years the types of materials found in the U.S. MSW stream have evolved, in part due to cultural changes related to the types of media used to provide information, changes in packaging and marketing products, relocation of major manufacturing centers, etc.

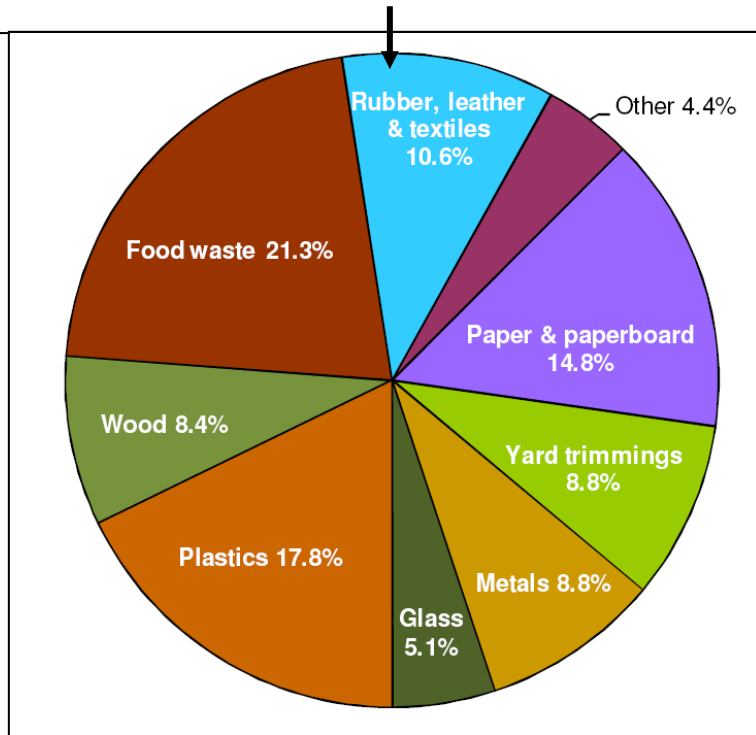
Table 1- Trends in Types of MSW Material Generated in the United States

[Municipal Solid Waste Generation, Recycling, and Disposal in the United States Tables and Figures for 2011 – US EPA](#) indicated the following nationwide trends in the amounts of different types of MSW annually **generated** (amount recycled + amount disposed) since 2000:

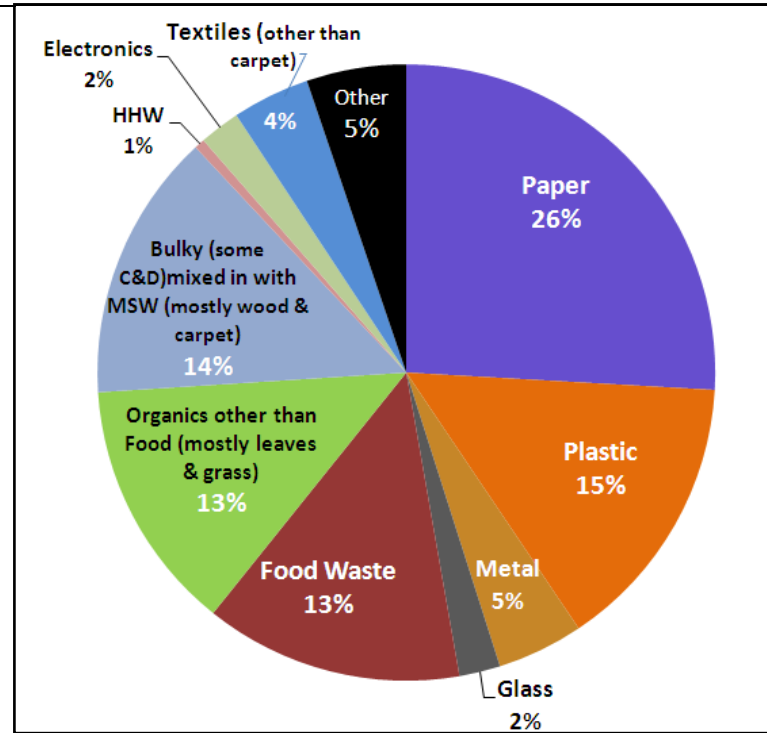
Examples of Materials with Decreasing Generation ↓ Rates in the U.S. 2000-2011	Examples of Materials with Increasing Generation ↑ Rates in the U.S. 2000-2011
Newspaper (73% recycled in 2011) 14,790,000 tons generated in 2000 vs 9,150,000 tons generated in 2011	Paper plates and Paper Cups (Negligible amount recycled in 2009) 960,000 tons generated in 2000 vs 1,340,000 tons generated in 2011
Magazines (54% recycled in 2009; % recycled not available for 2011) 2,230,000 tons generated in 2000 vs 1,510,000 tons generated in 2011	Clothing and Footwear (14% recycled in 2011) 6,470,000 tons generated in 2000 vs 9,020,000 generated in 2011
Office Papers (74% recycled in 2009. ; % recycled not available for 2011) 7,420,000 tons generated in 2000 vs 5,100,000 generated in 2011	Towels and Sheets and Pillowcases (18% recycled in 2011) 820,000 tons generated in 2000 vs 1,310,000 tons generated in 2011
Standard Mail Papers (63% recycled in 2009; % recycled not available for 2011) 5,570,000 tons generated in 2000 vs 3,750,000 tons generated in 2011	Plastic Packaging (12.9% recycled in 2011) 6,900,000 tons generated in 1990 vs 11,190,000 tons generated in 2000 vs 13,900,000 tons generated in 2011
Glass Packaging (34.2% recycled in 2011) 11,040,000 tons generated in 2000 vs 9,280,000 tons generated in 2011	Carpets and Rugs (7% recycled in 2011) 2,460,000 tons generated in 2000 vs 3,830,000 tons generated in 2011
	Food Scraps (3.9% recycled in 2011) 30,700,000 tons generated in 2000 vs 36,310,000 tons generated in 2011

Figure 4 – Types of Materials Found in MSW Disposed

The [U.S. EPA 2011 MSW Characterization Study](#) showed the following national data regarding major types of MSW disposed in **2011**.



A [Connecticut MSW disposal characterization study](#) conducted in **2009** showed the following major types of materials still being disposed as or with CT MSW in 2009.



The 2009 CT MSW disposal characterization [study](#) indicated that **CT designated (mandatory) recyclable items still accounted for approximately 27% of the weight of CT MSW disposed, and food waste accounted for another 13.5% of the CT MSW disposed in 2009.** In addition there was a high percentage of other recyclable material still being disposed in CT. (See Table 6 – Page 15 of the [study](#) and [figure 4a](#) on next page)

By maintaining and expanding source reduction and recycling efforts, Connecticut will continue to realize local and global environmental benefits while at the same time avoiding increased public expenditures for additional disposal capacity. **However, simply collecting material for recycling is not recycling; recycling occurs when the material is used to make a product, and the cycle is not complete unless those recycled content products are purchased and used. Therefore material needs to be recovered for recycling in a manner that maximizes quality and value.**

*Connecticut has the potential to do a much better job of source reduction and recycling and **needs to do that in a manner that ensures the quality and value of the material collected for recycling.***

Figure 4a

Recyclables Found in CT MSW Disposed in 2009 (includes some C&D waste disposed mixed with MSW)

Disposal data based on the CT 2009 MSW Disposal

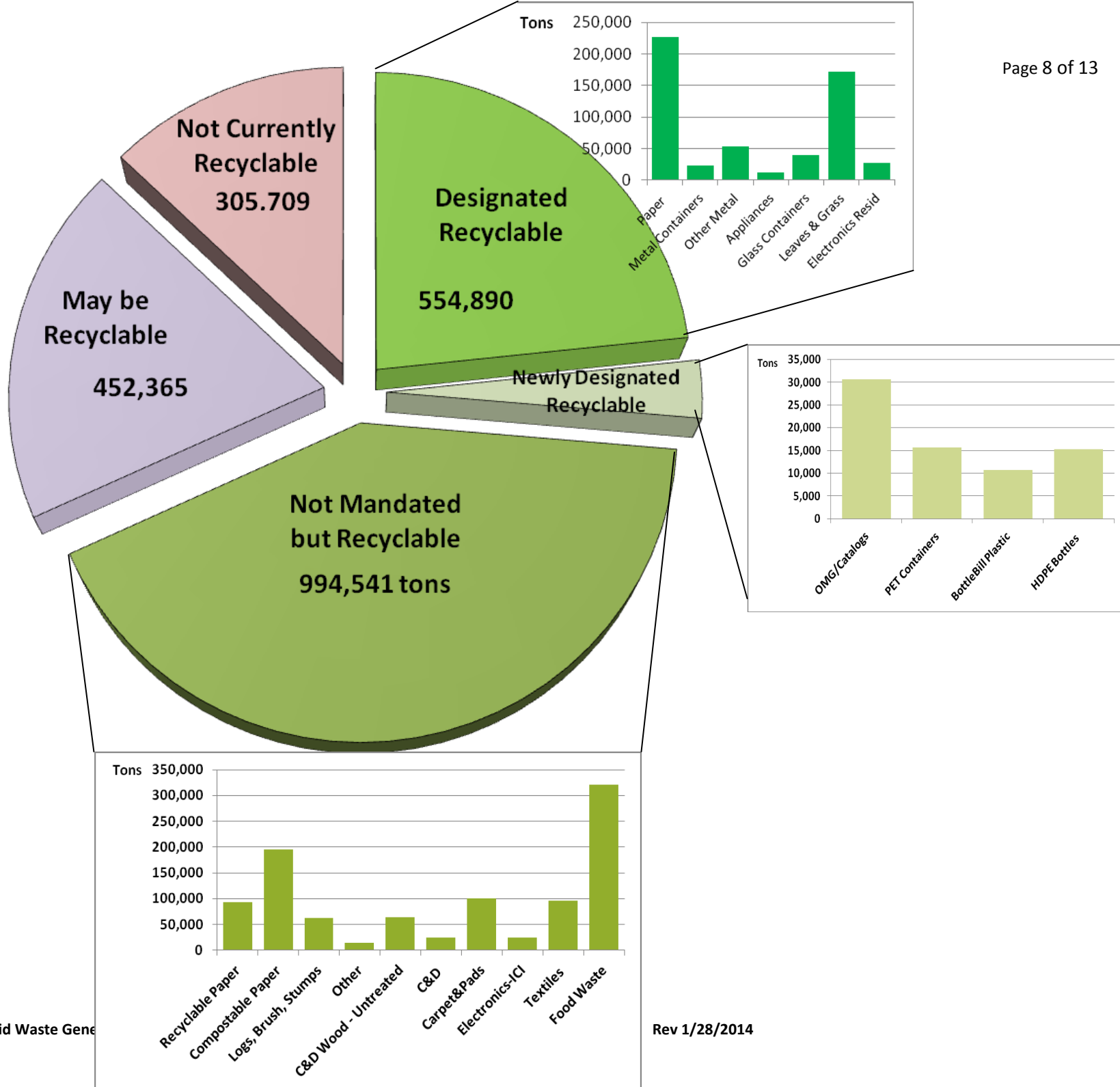


Table 2 – Connecticut MSW – Detailed Statistics FY2011 – Includes Residential and Non-Residential MSW



(please see note re data qualifiers)



CT MSW Recycled 2011	
TOTAL CT MSW REPORTED RECYCLED (TONS) (slight data discrepancy of 134tos as compared to amount recycled by material type)	798,647.93
POPULATION OF THE 169 TOWNS July 2010 (beginning of FY2011)	3,577,845
TPY (tons/person/year) CT MSW REPORTED RECYCLED (Based on recycling facility and VRF reports; annual municipal reports; RRF pre-combustion Fe reported recycled; and organics not reported on Muni reports)	0.2232
PPY (Pounds/Person/Year) CT MSW Recycled (as reported above)	446.4
PPD (Pounds/Person/Day) Recycled	1.22
Grasscycled and Home Composted –Estimates FY2011	
TONS ESTIMATED. Grasscycled and Home Composted - Based on municipal programs promoting grasscycling and home composting) FY2011 (does not include tonnage for the eleven municipalities that still had not submitted their FY2011 AMRR as of 6/3/2013)	33,335.94
TPY (tons/person/year) Estimated Grasscycled and Home Composted FY2011	0.0093
PPY (Pounds/Person/Year) Estimated Grasscycled and Home Composted FY2011	18.6
CT MSW Disposed FY2011	
TONS CT MSW ESTIMATED DISPOSED FY2011 (landfilled and/or incinerated)	2,419,359.07
TPY (tons/person/year) CT MSW DISPOSED FY2011	0.6762
PPD (Pounds/Person/Day) CT MSW DISPOSED FY2011	3.71
CT MSW Generated FY2011	
Tons CT MSW Generated FY2011	3,218,007
TPY (tons/person/year) CT MSW GENERATED FY2011	0.8994
PPD (Pounds/Person/Day) CT MSW GENERATED FY2011	4.93
CT MSW RECYCLED SUMMARY FY2011	
% CT MSW REPORTED RECYCLED FY2011	25%
% CT MSW REPORTED RECYCLED +% Estimated Home Composted/Grasscycled	26%



Table 3 - Connecticut MSW Reported Recycled¹ by Material Type FY2011 – (see [note #1](#) in Figure 1) (BCP = bottles, cans, paper)

Material Category	Recyclable Item Reported Marketed	Tons Marketed (BCP) or Collected FY2011
CONTAINERS- Glass, Metal, Plastic - Bottles, Cans, & Other Containers 61,379.62 tons Tonnage mainly based on data obtained from marketed reports submitted by CT solid waste facilities permitted to process source separated recyclables. Some municipal recycling report data also included.	Aluminum Cans and Foil (some facilities are reporting Al cans marketed together with tin cans –see metal containers and ferrous cans categories below)	679.96
	Aseptic Containers/Paper Beverage Containers	56.50
	Commingled Containers (mix of bottles and cans – may contain a small amount of bottle bill material)	10.68
	Ferrous Cans	4,011.50
	Glass Aggregate - Does not include glass aggregate used as landfill cover.	13,262.37
	Glass Brown	215.46
	Glass Containers – Mixed (Most sent to glass beneficiators to be optically sorted and marketed- % actually recycled by glass beneficiators not reported to DEEP)	13,841.45
	Glass Flint	1,649.57
	Glass –Green	1,753.84
	Metal Containers	3,792.24
	Plastic – Baled	888.00
	Plastic – Clear PET	2,662.14
	Plastic – Mixed Or Pigment PET	3,033.56
	Plastic - Natural HDPE	1,916.61
	Plastic Mixed	8,408.68
	Plastic-Mixed or Pigmented HDPE	3,044.56
	Plastic mix - #1 and #2	1.97
	Plastic mix - #3 thru #7	1,460.11
	Plastic - Other Plastic	273.66
	Containers Marketed as Part of a Single Stream Recyclable Mix (Estimated that containers were 11%, by weight, of the single stream mix)	138.52
Containers Collected Dual Stream but Weighed Together with Paper (Estimated that containers were 11%, by weight of the material collected dual stream)	278.24	



Material Category	Recyclable Item Reported Marketed	Tons Marketed (BCP) or Collected FY2011
<p>ELECTRONICS - 3,812.27 tons These figures only represent electronics collected through municipal programs i.e. they do not include electronics recycled from non-residential sectors and therefore underestimate the amount collected for recycling.</p>  <p>Also need to be aware that the amount collected and processed for recycling does not represent the amount actually used to make products.</p>	CELL PHONES (not reported to DEEP)	0
	ELECTRONICS (CRTs, Televisions, electronics) – through municipal programs	3,812.27
<p>ORGANICS - 270,163.56 tons</p>  <p>Based on data reported in the FY2011 Annual Municipal Recycling Reports and FY2011 data submitted by facilities processing source separated food scraps</p>	Brush - Yard Waste	69,943.55
	Christmas Trees	190.5
	Cow Manure	679
	Food Proc Residuals (Source separated)	5,178.3
	Grass	2,263.25
	Leaves	143,684.72
	Oil Cooking Grease (thru municipal programs)	6.33
	Wood Chips From Yard Waste	1,757.31
	Wood from Furniture, Pallets, etc.	56.52
	Yard Waste	46,404.08
<p>PAPER - 423,565.83 tons</p> <p>Tonnage based mainly on data obtained from marketed reports submitted by CT solid waste facilities permitted to process source separated recyclables. Some municipal recycling report data also included.</p>	Books	39.71
	Boxboard	3,208.37
	Coated Bookstock	916.64
	Corrugated	206,310.31
	Corrugated/Newsprint Mix	18,378.36
	Magazines	100.77
	Newspaper	74,752.79
	Newspaper #8	1,181.21

Material Category	Recyclable Item Reported Marketed	Tons Marketed (BCP) or Collected FY2011
 <p>PAPER (cont'd)</p>	Office- High Grade White Ledger Paper	3,567.81
	Office Paper	30,845.75
	Paper Mixed	65,685.14
	Printer Paper Waste	15,140.26
	Phone Books	70.75
	Paper Collected as Part of a Single Stream Recyclable Mix (Estimated that paper was 89%, by weight, of the single stream mix)	1,120.71
	Paper Collected Dual Stream but Weighed Together with Containers (estimated that paper was 89% by weight of the material collected dual stream).	2,247.25
 <p>SCRAP METAL - 37,491.13 tons Based on data obtained from the FY2011 Annual Municipal Recycling Reports and FY2011 MidCT RRF Operation Reports. There were an additional 30,390.87 tons of post-combustion Fe recycled from RRF ash. (Ash is categorized as a "special waste").</p> <p>The amount of scrap metal reported recycled grossly underestimates the total amount of scrap metal recycled from CT since it only represents scrap metal recycled through municipal and some state agency programs and the MidCT RRF. It does not include most scrap metal recycled from commercial and institutional sectors nor scrap metal sold by individuals.</p>	Propane Tanks	16.17
	Scrap Metal – Represents only scrap metal recycled through municipal programs (with one or two exceptions). (15% subtracted from reported amount to account for residue)	22,757.77
	Scrap Metal – RRF Pre-Combustion	14,705.74
	Scrap Metal - Appliances	11.45
TEXTILES 237.29 tons	Sneakers (through municipal programs)	0.5

Material Category	Recyclable Item Reported Marketed	Tons Marketed (BCP) or Collected FY2011
Based on data obtained from the FY2011 Annual Municipal Recycling Reports. 	Used Clothes/Goods (through municipal programs)	236.79
OTHER MSW Recycled - 2,160.13 tons Based mainly on data obtained from the FY2011 Annual Municipal Recycling Reports. 	Automotive Recyclables - Includes: Anti-Freeze, Oil Filters, Storage Batteries, Waste Oil (mostly through municipal programs)	2,091.43
	Ballasts	0.17
	Batteries (Other)	0.44
	Boat Shrink Wrap	1.73
	Freon	1.66
	Household Batteries (Alkaline)	0.64
	CDs, DVDs	0.25
	Mattresses	21
	Mercury Lamps; Fluorescent Lamps; Hid's; Specialty Lamps	31.01
	Nickel – Cadmium Rechargeable Batteries	10.54
	Other	1.26

QUALIFIERS FOR DATA USED TO CALCULATE CONNECTICUT MSW RECYCLING, DISPOSAL, GENERATION RATES

Recycling Data Qualifiers:

- Recycling data is based on information provided on quarterly reports submitted to the DEEP by CT solid waste facilities permitted to process source separated recyclable items, CT regional solid waste transfer stations permitted to transfer recyclables, and the Annual Municipal Recycling Reports submitted to the DEEP.
- The tonnage of leaves or other yard waste recorded as being recycled at municipal sites is usually estimated on the basis of cubic yards. The reliability of the conversion factor may be affected by the moisture content of the leaves and other material.
- An estimate of the amount of yard waste and food waste backyard composted and the amount of grass “grasscycled” is based on descriptions in the Annual Municipal Recycling reports of municipal or regional programs to promote those activities.
- Recycling tonnages generally **do not** include glass, metal, and plastic recycled through the Connecticut bottle deposit law infrastructure.
- Tonnages of non-residential material recycled **are generally under-reported**.
 - Recycling tonnages **do not** include: most of the commercially recycled scrap metal, automobile scrap metal, waste oil recycled by businesses or garages, or most of the storage batteries which are recycled through the Connecticut storage battery deposit infrastructure.
 - Recycling tonnages generally **do not** include material backhauled by retail chains to out-of-state distribution centers for recycling or other recyclable material which does not pass through a permitted CT solid waste/recycling facility. With new hauler reporting requirements pursuant to P.A. 10-87, some of this data may be available to DEEP in the future.
- Tonnage of landclearing and demolition material recycled is not included in the MSW statistics
- Tonnages of material reported as “recycled” reflect the amount of MSW reported collected for recycling, or, in the case of bottles, cans, and paper the amount reported marketed to brokers, beneficiators, or end users by Connecticut recycling processing facilities. **Recycling tonnages do not necessarily reflect the amount actually used to make products.** For example, the amount of residue generated at and disposed by secondary processing facilities (e.g. glass beneficiators) and the amount of residue and unusable materials disposed by end users (e.g. paper mills) or brokers is not reflected in the recycling statistics.
- Material used as alternative daily landfill cover material is not knowingly included in the recycling stats.
- Material (other than waste oil) burned for energy is not considered recycled.

MSW Disposal Data Qualifiers

- Disposal data is based on information provided on quarterly reports submitted to the DEEP by Connecticut permitted solid waste facilities including resource recovery facilities (waste-to-energy facilities), landfills, solid waste transfer stations, recycling facilities (residue), C&D VRPs (MSW separated out from C&D waste and disposed), and annual municipal recycling reports submitted to the DEEP.
- As of July 31, 2011 and annually thereafter, data regarding MSW hauled directly out-of-state for disposal is now [required to be reported](#) to municipalities and to DEEP by collectors hauling such MSW. However, compliance with that reporting requirement may not be complete as yet. Therefore, there may be additional tonnages of MSW **disposed** that is not included in the CT MSW stats.
- Tonnages of MSW disposed do not always include the tonnage of disposed bulky MSW (furniture, carpets, etc.) which is often reported to DEEP as “bulky waste” or “construction and demolition (C&D)” waste. It is anticipated that in future reporting – the term “bulky waste” will be replaced by the following waste categories: “Construction and Demolition Waste”; “Oversized MSW” (furniture, carpets, mattresses, etc.); “Landclearing” debris (logs and stumps); and “Yard Waste Brush”.
- MSW disposal figures represent residential and non-residential disposal.