

VERMONT SOLID WASTE GENERATION - SUMMARY 2011

MATERIALS	(TONS)
MUNICIPAL SOLID WASTE (MSW)	
MSW Materials Diverted (Table 2)	218,567
MSW Materials Disposed (Table 3 or 4)	413,517
TOTAL MSW:	632,084
CONSTRUCTION & DEMOLITION WASTE (C&D) & WOOD	
C&D/Wood Used in Landfills - VT Waste (Table 4B)	2,776
C&D/Wood Used in Landfills - Waste From Other States (Table 4B)	8,383
C&D Disposed - VT Waste (Tables 4 & 4A)	81,059
C&D Disposed - Waste From Other States (Tables 4 & 4A)	20,022
Wood Burnt (Table 2 worksheet & Table 3)	57
C&D Unaccounted - Diverted or Disposed (Estimated) ¹	88,893
TOTAL C&D/WOOD:	192,750
OTHER SOLID WASTE (Does Not include Biosolids)	
Other Diverted	-
Other Used in Landfills - VT Waste (Table 4B)	45,241
Other Used in VT Landfills - Waste From Other States (Table 4B)	1,280
Other Disposed - VT Waste (Tables 4 & 4A, see below for biosolids)	14,689
Other Disposed - Waste From Other States (Table 4A)	38,188
TOTAL OTHER:	99,398
HHW, CEG & ELECTRONICS COLLECTION BY DISTRICTS & TOWNS (Table 7)	
HHW Diverted	
CEG Diverted	
Electronics	
TOTAL HHW & CEG:	-
Biosolids	
Beneficial Reuse (Table 6)	16,134
Used in Landfills - VT Biosolids (Table 4B)	6,177
Used in Vermont Landfills - Biosolids From Other States (Table 4B)	
Landfilled, Incinerated - Vermont Biosolids (Tables 4A & 6)	21,798
Disposed in VT Landfills - Biosolids From Other States (Table 4A)	27,971
TOTAL BIOSOLIDS:	65,903
TOTAL SOLID WASTE GENERATED (tons) :	
	990,135

¹ Difference between C&D tonnages reported and estimated C&D Waste Generation rate of 192,750 tons (1.7# per person per day). Source: 2007 Massachusetts Construction and Demolition Debris industry Study DSM Environmental Services May 16, 2008.

TABLE 1
GENERATION , DIVERSION AND DISPOSAL
VERMONT MUNICIPAL SOLID WASTE

	1987 ^[2]	1994 ^[2]	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Generation	350,000	474,800	570,750	563,564	576,797	597,811	612,279	604,442	644,327	614,519	606,276	648,347	627,811	600,872	587,127	632,084
Diversion	42,000	164,830	195,930	199,301	189,401	182,562	184,149	186,407	189,047	183,289	192,003	206,648	207,854	213,626	205,156	218,567
Disposal	308,000	309,970	374,820	364,263	387,396	415,249	428,130	418,035	455,281	431,230	414,273	441,699	419,957	387,246	381,971	413,517
Population ^[3]	535,000	583,836	600,416	604,683	609,909	612,225	615,250	617,101	618,794	619,736	620,778	621,254	621,270	621,750	625,741	626,592
Per Capita MSW Generation (Tons/Year)	0.65	0.81	0.95	0.93	0.95	0.98	1.00	0.98	1.04	0.99	0.98	1.04	1.01	0.97	0.94	1.01
(Pounds/Day)	3.58	4.46	5.21	5.11	5.18	5.35	5.45	5.37	5.71	5.43	5.35	5.72	5.54	5.32	5.14	5.53
Per Capita MSW Diversion (Tons/Year)	0.08	0.28	0.33	0.33	0.31	0.30	0.30	0.30	0.31	0.30	0.31	0.33	0.33	0.34	0.33	0.35
(Pounds/Day)	0.43	1.55	1.79	1.81	1.70	1.63	1.64	1.66	1.67	1.62	1.69	1.82	1.83	1.92	1.80	1.91
Per Capita MSW Disposal (Tons/Year)	0.58	0.53	0.62	0.60	0.64	0.68	0.70	0.68	0.74	0.67	0.67	0.71	0.68	0.62	0.61	0.66
(Pounds/Day)	3.15	2.91	3.42	3.30	3.48	3.72	3.81	3.71	4.03	3.66	3.66	3.90	3.70	3.40	3.34	3.62
% of MSW Waste Generation																
	1987	1994	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Generation	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Diversion	12%	34.7%	34.3%	35.4%	32.8%	30.5%	30%	31%	29%	30%	32%	32%	33%	36%	35%	35%
Disposal	88%	65.3%	65.7%	64.6%	67.2%	69.5%	70%	69%	71%	70%	68%	68%	67%	64%	65%	65%

NOTES:

^[2] Table 1.1, 2001 State of Vermont Revised Solid Waste Management Plan

^[3] <http://census.gov>

TABLE 2
SOLID WASTE DIVERSION - 2011
2011 - ESTIMATED BY MATERIAL TYPE & DIVERSION ACTIVITY

MATERIAL	SOURCE OF MATERIAL						TOTAL (Tons)
	Recycling Facilities	Soft Drink and Beer Distributors ⁽¹⁾ (Broker Direct)	Economic Recycling ⁽¹⁾ (Direct to Market)	Scrap Metal Facilities	Organics Composting	Reuse Facilities & Programs ⁽¹⁾	
SINGLE STREAM	10,556 ⁽²⁾						10,556
FIBERS	60,703	386	33,495			137	94,721
CONTAINERS	14,537	17,500	117			19	32,173
SCRAP METAL			251	34,830		159	35,240
ORGANIC WASTES					36,411		36,411
MISCELLANEOUS	7,286		14			2,167	9,467
Total:	93,081	17,886	33,877	34,830	36,411	2,482	218,567

2011 MSW DISPOSED (tons): 413,517

2011 MSW DIVERSION RATE: 35%

⁽¹⁾ Data for containers from report titled *Analysis of Vermont's Bottle Bill: Costs, Impacts and Expansion*, Northbridge Environmental Management Consultants, December 2006. Data for fibers from report titled *Vermont's Municipal Solid Waste Diversion Rate 2001*, DSM Environmental Services, September 2002

⁽²⁾ Single stream material that left the Vermont solid waste system; destination: FCR MRF in Auburn, MA or Sierra Fibers in Albany, NY

2011 Table 2 Worksheet using 2011 Quarters data - grouped by containers, fibers and other (tons)

Material Code	Material	MRF Total	TS Direct to Market	Total MRF VT+ TS Direct	Subtract materials from other states into VT MRF system	materials diverted to bottle bill	Total diverted 2010
AC	Aluminum Cans						
CN	Cans	1,249	206				1,456
CT	Containers, co-mingled	2,517	61		386		2,193
GL	Glass	7,529	427			491	7,465
HD	HDPE (#2)	893	136				1,029
PE	PETE (#1)	890	124				1,014
PO	Other plastics	805	649		75		1,379
PM	Mixed #1 & #2						
RE	Redemption Bags						
TC	Tin Cans						
	TOTAL:	13,884	1,604		461	491	14,537
Material Code	Material	MRF Total	TS Direct to Market	Total MRF VT+ TS Direct	Subtract materials from other states into VT MRF system		Total diverted 2010
BK	Books	30	166				195
BX	Boxboard/Paperboard	33	114				147
CC	Corrugated Cardboard	24,989	7,821		326		32,484
FC	Fibers, co-mingled	3,706	632		643		3,696
MA	Magazines	117	127				244
NP	Newspapers	15,641	3,556		165		19,033
OP	Mixed Paper	2,906	2,136		138		4,903
PA	Paper Co-mingled						

WP	White Office Paper						
	TOTAL:	47,423	14,551		1,271		60,703
Material Code	Material	MRF Total	TS Direct to Market	Total MRF VT+ TS Direct	Subtract materials from other states into VT MRF system		Total diverted 2010
1S	Contain.&Fibers	6,235*	5508.32*		1,187		10,556
		* Primarily single stream materials sent to an out-of-state MRF					
Material Code	Material	MRF Total	TS Direct to Market	Total MRF VT+ TS Direct	Subtract materials from other states into VT MRF system		Total diverted 2010
AB	Automobile Batteries	12	65				78
AF	Antifreeze		15				15
BA	Batteries		6				6
BL	Ballast		1				
EL	Electronics	165	1,232		4		1,393
EX	Waste Exchange / Reuse		35				35
FL	Florescent Bulbs	10	54				64
HG	Mercury Products-not f.bulbs						
LY	Leaf and Yard		1,157				1,157
OR	Other Recyclables						
OT	Other Waste						
PB	PCB Devices		3				3
PP	Propane Tanks	1	12				13
PT	Paint		113				113

TX	Textiles	48	178		226
UF	Used Oil Filters	1	8		9
UO	Used Motor Oil		20		20
WG	Wood, clean - ground				
WW	Stumps, Brush, Wood		4,151		4,151
	TOTAL:	236	7,050		7,286
Total VT MSW Diverted (not including bottle redemption):					93,081
Other Diverted:					
DW	Dry Wall (sheet rock)		22		22
CR	Con/Demo Debris Recycling		3,542		3,917
IN	Inerts- Concrete, Masonry etc.				
RB	Road, Bridge or Highway Debris		23,622		23,246
NF	Non-ferrous Metals				
SA	Salvage				
TI	Tires	129	922		1,051
TI	Tires - Burning				
UO	Used Oil - burning	9	18		27
WG,WG,LY	Burning- McNeil		2,318		2,318
LY,WW	On-site burn		6		6
TOTAL:					30,588

ME	Scrap metal, appliances & wg's	223	6,028			6,251
From Table 1a						
UO	Use Oil Burnt					
TI	Tires - Burnt/disposed					
011 Organics Composting:						
Included in MSW Diversion:						
Material Code	Material		Total			
CF	Food Waste		3,114			
CP	Paper		1			
WG	Wood waste		2,076			
LY	Yard Waste		5,913			
OC,OT,PA	Other compostable materials		515			
	Total Categorical and Full Certification:		11,620			
	Backyard Composting (Estimate):		23,925			
	Exempt (2005 estimate):		866			
	Included in MSW Diversion:		36,411			
Composting Not included in MSW diversion - Industry						
Material Code	Material		Total			
CI	Ice Cream waste		6			
CW,CS	Liquid Food Waste					
DA	Dead animal remains		1,630			
MN	Manure/Bedding		<u>2,971</u>			
Total:			4,607			

TABLE 3**Vermont Solid Waste - 2011
Disposal & Incineration**

DESTINATION	TYPE OF WASTE					Waste Used in Landfill ^[2]
	MSW (Tons)	C&D/Wood (Tons)	Other ^[1] (Tons)	Total (Tons)	% Disposed	
In-State						
Landfill	344,203	81,001	36,487	461,691	83.78%	54,504
Incineration ^[3]		57		57	0.01%	
Subtotal:	344,203	81,059	36,487	461,749	83.79%	
Out-of-State						
Landfill	34,802	2,689		37,491	6.80%	
Incineration	33,189			33,189	6.02%	
Transfer Stations	1,322	17,333		18,656	3.39%	
Subtotal:	69,314	20,022	0	89,336	16.21%	
Total (tons):	413,517	101,080	36,487	551,085	100%	54,504

NOTES:

^[1] Refer to Table 4A for specific wastes disposed in Vermont landfills including some wastes from other states.

^[2] Refer to Table 4B for specific wastes used in landfills including some wastes from other states.

^[3] On site clean wood burn at transfer stations.

TABLE 4 DESTINATIONS FOR VERMONT SOLID WASTE - 2011 DISPOSAL & INCINERATION

State	Facility	MSW (Tons)	C&D & Wood (Tons)	OTHER (Tons) ⁽¹⁾	Total (Tons)	Waste Used In Landfill ⁽²⁾
VT	Waste USA Landfill	242,891	60,723 [†]	20,335	323,949	30,539
	WSI Landfill	100,654	14,300	14,080	129,034	23,655
	1 - 1000 Ton Landfill (AD080)	407			407	
	2 - 1000 Ton Landfill (AD720)	251	85	0	336	
	Burgess C&D Landfill		3,046	32	3,078	310
	On-site Disposal - Transfer Stations & Cat.Cert Sites		2,847*	2,040	4,887	
	On-site Burning, clean wood - Transfer Stations		57		57	
	Total Vermont (tons):	344,203	81,059	36,487	461,749	54,504
MA	Eco/Pittsfield Incinerator	2,281			2,281	
	South Hadley Landfill	14,557			14,557	
	Total Massachusetts (tons):	16,838			16,838	
NH	Lebanon Landfill	13,630			13,630	
	North Country Env Services (NCES) Landfill	4,926	1,670		6,596	
	Mt. Carbury Landfill	952	481		1,434	
	Wheelabrator (Claremont) Incinerator	17,649			17,649	
	Labombard Transfer Station		4,665		4,665	
	Gobin Disposal Systems/Casella Transfer Station	245	6,845		7,091	
	Witcher Transfer Station	670	292		962	
Total New Hampshire (tons):	38,074	13,954		52,027		
NY	Hudson Falls (Adirondak Resources) Incinerator	13,259			13,259	
	Fort Edward C&D Landfill		389		389	
	Clinton County Landfill	568	148		716	
	Seneca Meadows Landfill	168			168	
	Fort Ann Transfer Station		5,531		5,531	
	County of Franklin SW Authority Transfer Station	407				
	Total New York (tons):	14,402	6,068		20,470	
Total Out-Of-State (tons):	69,314	20,022		89,336		
Total In-State & Out-Of-State (tons):		413,517	101,080	36,487	551,085	54,504

(1) Refer to Table 4A for specific wastes disposed in Vermont landfills.

(2) Refer to Table 4B for specific wastes used in landfills.

† This tonnage is an estimate because C&D was included in MSW tonnage; based on C&D percentage of MSW of prior years.

* Does not include 4,538 tons of inert material disposed of in the Cochran Road Pit operated by Dale E. Percy, Inc.

**TABLE 4A
OTHER WASTES DISPOSED IN VERMONT LANDFILLS 2011
(Detailing Column E from Table 4)**

	Waste USA Landfill - VT Waste	Waste USA Landfill - Waste From Other states	WSI - VT Waste	WSI Landfill - Waste From Other states	Burgess Bros. Landfill	1000 Ton Landfills - Salisbury and Bristol	Transfer Stations & Cat Cert Disposal - On-site Disposal	TOTAL TONS
Asbestos	747	16,856	311	69				17,983
Bulky Wastes	24							
Biosolids	16,783	9,887	5,015	18,084				49,769
Contaminated Soils	1,576	906	6,753	8,710				17,945
Medical Waste	106							106
Paper Sludge	230	852						1,082
Other Wastes	869	8,734 ⁽¹⁾	2,001	2,061	32		2040 ⁽²⁾	7,003
TOTAL TONS:	20,335	37,235	14,080	28,924			2,040	102,614

(1) does not include 7,364 tons of C&D waste from C&D recycling facility in NH

(2) does not include 71,753 tons of tailings landfilled at Omya

TABLE 4B
Waste Used in Landfills (Tons) - 2011
(Detailing Column H from Table 4)

	Waste USA Landfill - VT Waste	Waste USA Landfill - Waste From Other states	WSI - VT Waste ⁽¹⁾	WSI Landfill - Waste From Other states	Salisbury Landfill - VT Waste	Salisbury Landfill - Waste From Other states	Hartford TS - VT C&D to Lebanon LF	Hubbard & Castleton TSs - VT C&D to NY Landfill(s)	Burgess	TOTAL TONS
Biosolids	6,177									
C&D	2,769	815					1,108		310	5,002
Contaminated Soils	16,838	667	17,854							35,359
Foundary Sand			3,322							3,322
Paper Sludge			2,472							2,472
Ground Wood Waste			7	7,568						7,575
Other Wastes	4,755	613								5,368
TOTAL TONS:	30,539	2,095	23,655	7,568					310	64,167

TABLE 5
Operating & Permitted Solid Waste Disposal Capacity in Vermont as of May 2013^[3]

Solid Waste Landfills	Remaining Capacity For Waste (tons)	Capacity Estimate Based on	Maximum Permitted Fill Rate		Permit Year
			(tons/day)	(tons/year)	
Waste USA Landfill, ^[1] Phase I, II, III & IV-1, IV-2A	400,000	Ground Survey	2,500	370,000	4/1 - 3/31
NEWS Landfill, ^[1] Phase IV- 2B, IV-3A&B, IV-4A&B	4,500,000	Not Constructed Yet			
WSI Landfill ^[2] Cell 3A & 3B	800	Survey	0	0	1/1 - 12/31
Burgess C&D Landfill	0	Estimate 1/2007	0	0	10/1 - 9/30
Totals	4,900,800		2,500	370,000	

Maintains ANR Solid Waste Certification:

Greater Upper Valley Solid Waste District Hartland - Phase 1 North	250,000		200	50,000	Not planning to construct in near Future
Northwest Solid Waste District - Sheldon - Cell 1	130,000		125	20,000	Not planning to construct in near Future

**Designing New Landfill and preparing application for submittal to ANR:
Chittenden Solid Waste District – Williston**

^[1] Waste USA Landfill. Coventry, Vermont. Also called NEWS (New England Waste Services) Landfill or Coventry Landfill.

^[2] Moretown Landfill. Moretown, Vermont. Previously called WSI Landfill.

^[3] Does not include the two 1000 TPY unlined landfills operating in Bristol Town and Salisbury and a C&D landfill in Bennington .

TABLE 6

2011 Estimated Quantities of Biosolids Managed In and Out of State
(As reported to RMS¹ from Vermont facility generators)

Amounts are in wet tons at 15% solids²

Management Option	In-State (wet tons)	Out-of-State (wet tons)	Total (wet tons)	Percent of Total	Percent Managed
Beneficial Uses:					
Land Application	7,658	0	7,658	13.6%	
EQ Biosolids	7,652	824	8,476	15.1%	
Subtotal	15,310	824	16,134		28.7%
Non-Beneficial					
Landfill	36,503	2,420	38,923	69.3%	
Incineration ³	0	1,110	1,110	2.0%	
Subtotal	36,503	3,530	40,033		71.3%
Total:	51,813	4,354	56,167	100%	100%
Percent of Total In & Out of State	92.2%	7.8%			

¹RMS - Residuals Management Section. Wastewater Management Division. (802) 338-4833.

²All amounts of biosolids reported to DEC are converted to dry tons. Then the dry tons are converted to wet weight assuming 15% solids, which is generally the percent solids that can qualify to be landfilled. To convert wet tons to dry tons, multiply wet tons X 0.15.

³Please note that nearly all biosolids sent to incinerators are in liquid form and the actual weight is greater than that in this table.

2011 Actual Quantities of Septage Managed In and Out of State⁴
(As reported to RMS¹ by All Septage Haulers Operating in Vermont)

Amounts are in gallons

Management Option	In-State (gallons)	Out-of-State (gallons)	Total (gallons)	Percent of Total	Percent Managed
Beneficial Uses:					
Land Application ⁵	11,704,306	196,000	11,900,306	27.5%	
EQ Biosolids ⁶	3,675,290	1,086,889	4,762,179	11.0%	
Subtotal	15,379,596	1,282,889	16,662,485		38.5%
Non-Beneficial Uses:					
Landfill ⁷	0	0	0	0.0%	
Incineration	0	3,430,222	3,430,222	7.9%	
WWTF	21,211,141	1,946,355	23,157,496	53.5%	
Subtotal	21,211,141	5,376,577	26,587,718		61.5%
Total:	36,590,737	6,659,466	43,250,203	100%	100%
Percent of Total In & Out of State	84.6%	15.4%			

⁴Includes all septage generated in Vermont regardless of where disposed, and all septage disposed in Vermont regardless of where generated. It is estimate that <1% of the total volume is generated out-of-state and disposed in Vermont.

⁵Includes septage that is directly land applied or which is disposed at a WWTF that manages biosolids via land application.

⁶Includes septage that is directly treated in an EQ process or disposed at a WWTF that produces EQ biosolids.

⁷ Includes solids from dewatered septage that are disposed at a landfill.