

Figure 1: 2022 solid waste generated in Vermont. The 788,713 tons Generated included: 362,595 tons MSW Disposed, 175,869 tons Other Disposed, 247,107 tons Diverted, and 5,530 tons Safe Management.

Table 1. Status of Vermont landfills that were permitted for waste acceptance in 2022

Solid Waste Landfills	Location	Status	Permitted Fill Rate (tons/year)
New England Waste Services, Vermont (NEWSVT): Phase VI	Coventry	Operating	600,000
Northwest Solid Waste District – Sheldon: Cell 1	Sheldon	Permitted, not operating, no current plans for construction	20,000

Table 2. In-state and Out-of-State (OOS) materials disposed *within* Vermont landfills, as reported in 2022

	Total Tons	OOS Tons	VT Tons
	(as reported by disposal facilities)		(Total tons minus OOS tons)
MSW	305,826**	—	305,826*
C&D	111,429	7,718	103,711**
Sludge (WWTP)	45,780	33,379	12,401
Asbestos	4,483	3,236	1,247
Ash	547	447	100
Contaminated Soil	31,144	29,634	1,510
Sewer Grit	1,987	1,231	756
Paper Sludge	2,062	—	2,062
Medical Waste	112	—	112
MRF Residue	27,656	27,656	***
Other	8,409	3,815	4,594
TOTAL	539,436	107,115	432,321

* This is the adjusted MSW value that removes C&D material that was estimated to be mixed with MSW. The value that was reported by facilities is shown in Table 4, along with the adjustment calculations.

** This is the adjusted C&D value. The value that was reported by NEWSVT is shown in Table 4, along with the adjustment calculations.

*** Vermont’s in-state MRF residue is included within MSW.

Table 3. Solid waste sourced in Vermont but sent for management at an Out-of-State facility in 2022

	Massachusetts	New Hampshire	New York	Total
MSW	228	22,424	41,205	63,858
C&D	0	4,940	7,189	12,128
				75,986

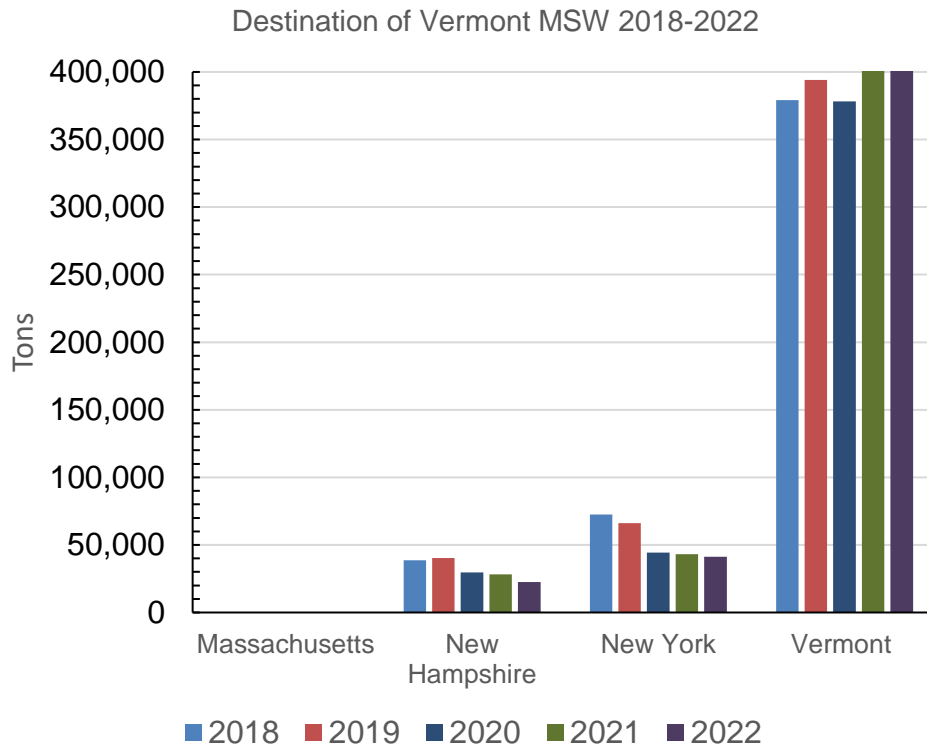


Figure 2: Destination of MSW that was generated in Vermont in 2022 and disposed in- or out-of-state, with recent years for comparison. After Vermont, New York received the largest tonnage of Vermont MSW, followed by New Hampshire. A very small amount of Vermont MSW is exported to Massachusetts.

Table 1: Adjustment of 2022 MSW tonnage for estimated C&D component.

	Reported Tonnages	C&D “Gate Survey” adjustment (16% of reported MSW + C&D)	C&D in MSW “Hand Sort” adjustment (11.1% of reported MSW)	Adjusted MSW Tonnage	Adjusted C&D Tonnage
Vermont MSW In-state Disposal	401,195.86	409,536.91 – 65,525.57 = 344,011.18		344,011.18 – 38,185.24 = 305,826	
Vermont C&D In-state Disposal	8,341.05	409,536.91 x 0.16 = 65,525.57	344,011.18 x 0.111 = 38,185.24		65,525.57 + 38,185.24 = 103,711
In-state Total	409,536.91				
Vermont MSW Out-of-State Disposal	63,857.65	*		63,857.65 – 7,088.40 = 56,769	
Vermont C&D Out-of-State Disposal	12,128.41	*	63,857.65 * 0.111 = 7,088.40		12,128.41 + 7,088.40 = 19,217
Out-of-State Total	75,986.06				
Totals	485,523			362,595	122,928

Table 5. Approved use of solid waste materials within Vermont landfill operations in 2022

Material	Use	Tonnage
Paper Sludge	Landfill Alternative Daily Cover	366
Contaminated Soils	Landfill Alternative Daily Cover	22,184
Sludge – cut with soil	Landfill Alternative Daily Cover	2,120
Processed C&D	Landfill Road Base	4,248
Sawdust	Landfill Road Base	1,058
Total		29,976

Table 6. Summary of Vermont's 2022 reported and estimated diversion activities

(in tons)	Fibers	Containers	C&D	Scrap Metal*	Food Waste	Leaf & Yard, Clean Wood	Foodbank Food Rescue	EPR programs	Miscellaneous
A- Reporting Facility to Market	68,772	16,318	1,311	15,278	22,017 [▲] 6,088 [■] 10,973 [♦]	4,695, 3,840		1,254 ^{▲▲} 109 ^{■■} 365 ^{♦♦}	753
B- Estimate of Direct to Broker/ Market (Economic Recycling)	20,707 [†]	10,066 ^{**} 2,686 [†]		1,616 [†]	2,552 [†]				1,159 [†]
C- Reported Reuse Activities	409	5	46				3,430 [‡]		47
D- Estimated Household Composting					36,083 [†]	16,528 [§]			
TOTALS	89,888	29,074	1,357	16,894	77,713	25,063	3,430	1,728	1959
	A + B + C + D = 247,107								

* Does not include material from certified salvage yards.

▲Denotes food scraps collected for composting.

■Denotes food scraps and packaged organics processed at the Depackaging facility and sent predominantly for anaerobic digestion.

♦Denotes food processing residuals sent for predominantly anaerobic digestion and some composting. Note this figure has been discounted to 15% of its total reported figure to be conservative.

▲▲Denotes material collected under the E-Cycles program.

■■Denotes batteries collected through Call2Recycle.

♦♦Denotes paint collected through PaintCare.

† Denotes a diversion estimate derived from the 2018 Vermont Waste Characterization Report (2018, DSM Environmental). See above descriptions of the diversion groups for details.

** Denotes an estimate of Bottle Bill containers diverted as derived from TOMRA data averaged over 5 years.

‡ Denotes annual food rescue or food donation tonnages provided by the Vermont Foodbank.

§ Denotes a leaf and yard waste diversion estimate derived from the Vermont's Municipal Solid Waste Diversion Rate 2001 study (2002, DSM Environmental). See above descriptions of the diversion groups for details.

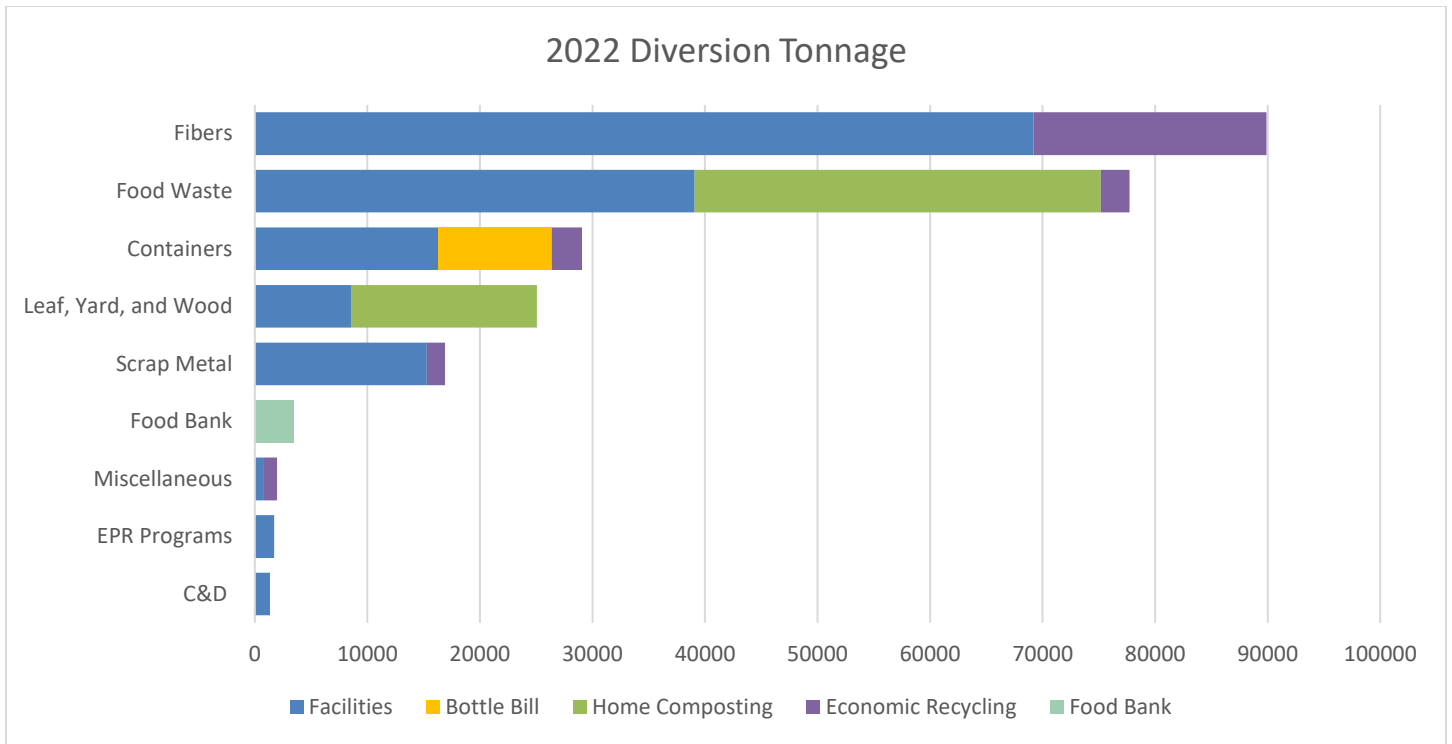


Figure 3: 2022 Diversion tonnage by material category, including data from reporting facilities (blue), estimates from the 2018 Waste Characterization Study (purple for economic recycling and green for home composting), and other sources, including Bottle Bill (yellow), and food rescue through the Vermont Food Bank (teal), ordered from greatest to least tonnage. The diversion categories with the five greatest tonnages are fibers; food waste; containers; leaf, yard, and clean wood; and scrap metal. The category with the lowest diversion tonnage is C&D.

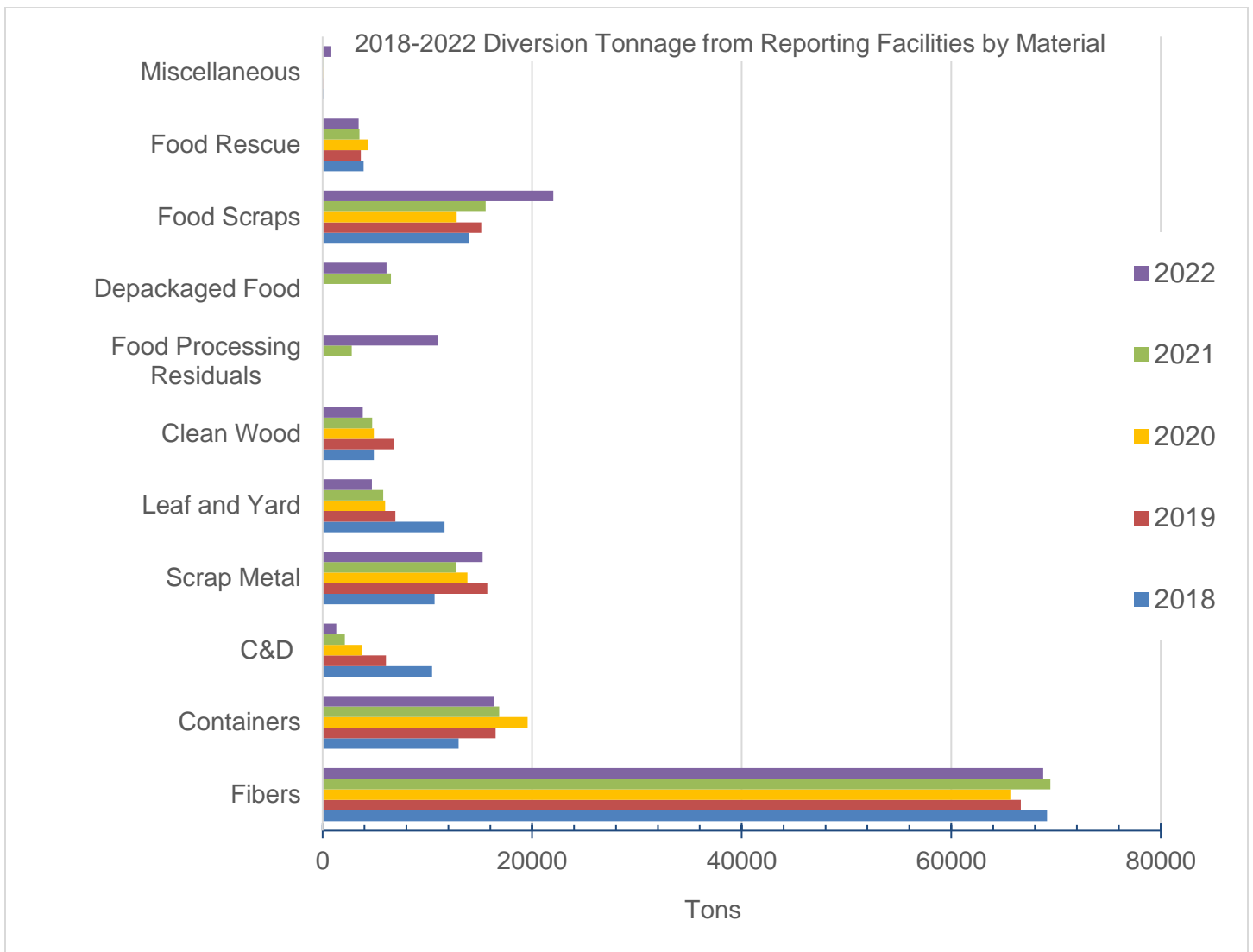


Figure 4: 2018-2022 comparison of materials marketed directly from Vermont solid waste facilities (Group A from Table 6 and Food Rescue) over the last five years (2018 to 2022).

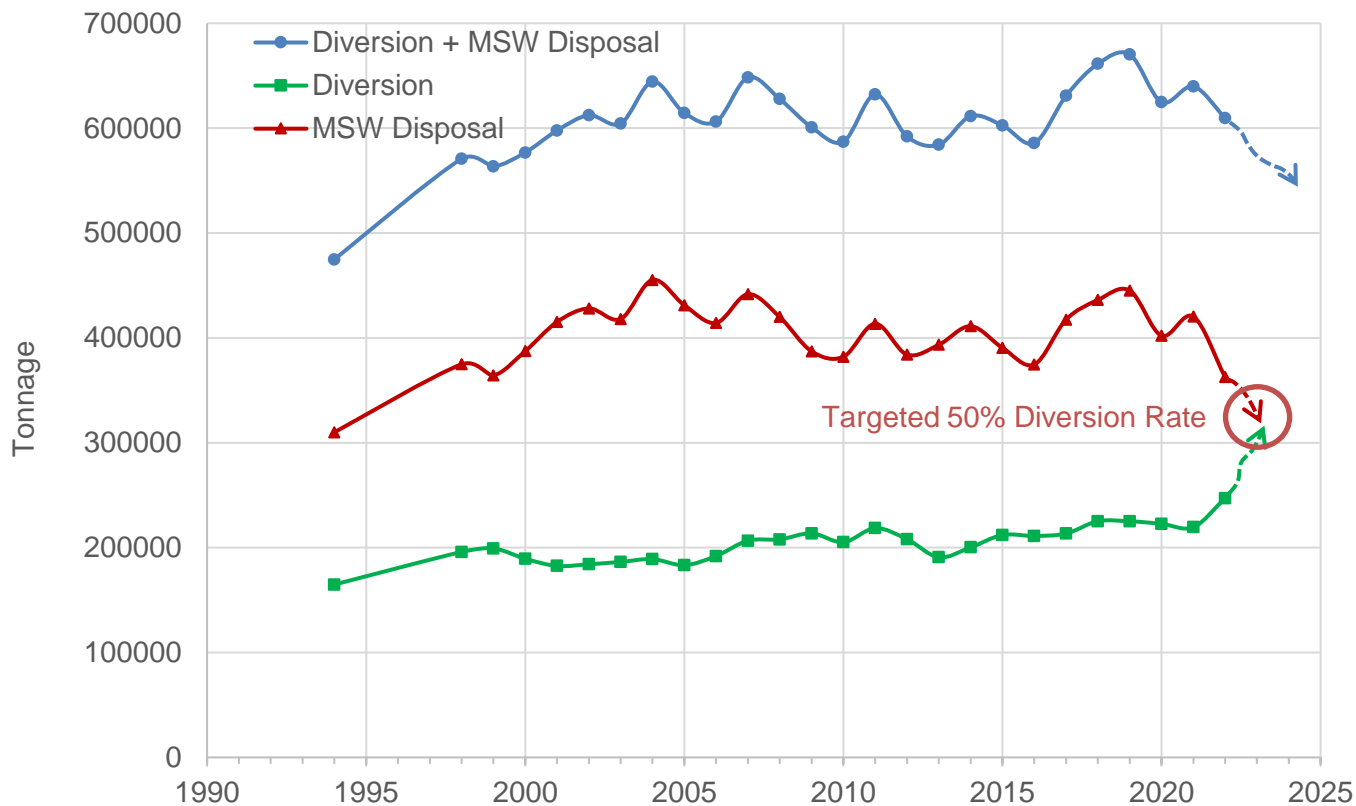


Figure 5: Long-term trends in waste partial Generation (top line), Diversion (bottom line), and MSW Disposal (middle line) and projections of the targeted diversion rate goal of 50% from the 2019 Vermont Materials Management Plan. To be consistent with past years, the Generation line is only the sum of MSW Disposal + Diversion and does not include Other Disposal or Safe Management tonnage.

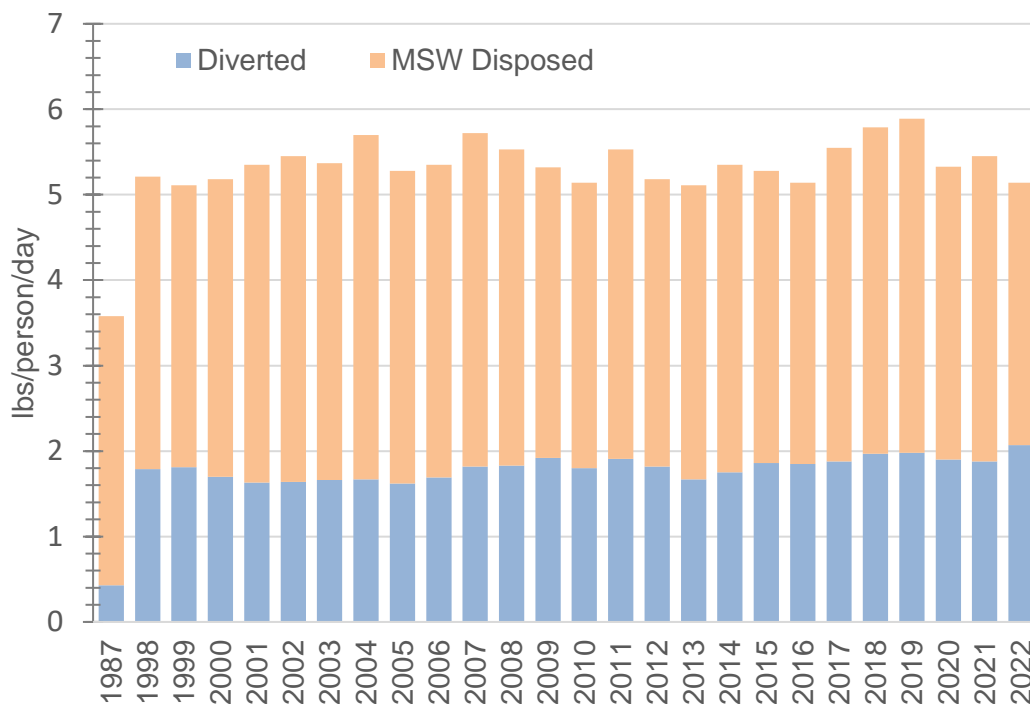


Figure 6: Pounds of waste generated per person per day (MSW Disposal + Diversion) by Vermonters.

Table 7. Generation, diversion and disposal totals for municipal solid waste. Includes tonnages, per capita breakdowns and percentage rates.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Generation	613,517	592,981	566,042	552,297	597,254	557,302	584,235	611,472	602,617	585,789	630,851	661,385	670,348	624,869	639,835	791,101
Diversion	171,818	173,024	178,796	170,326	183,737	173,258	190,797	200,272	212,065	211,152	213,449	225,219	225,122	222,769	219,501	247,107
MSW Disposal	441,699	419,957	387,246	381,971	413,517	384,044	393,438	411,200	390,552	374,637	417,402	436,166	445,226	402,100	420,334	362,595
Other Disposal																175,869
Safe Management																5,530
Population [1]	621,254	621,270	621,750	625,741	626,592	625,953	626,630	626,562	626,042	624,594	623,657	626,299	623,989	643,077	645,570	647,064
Per Capita MSW Generation (Tons/Year)	0.99	0.95	0.91	0.88	0.95	0.89	0.93	1.0	0.96	0.94	1.01	1.08	1.08	0.97	0.99	0.94**
(Pounds/Day)	5.41	5.23	4.99	4.84	5.22	4.88	5.11	5.35	5.27	5.14	5.54	5.89	5.88	5.30	5.43	5.16**
Per Capita MSW Diversion (Tons/Year)	0.28	0.28	0.29	0.27	0.29	0.28	0.30	0.32	0.34	0.34	0.34	0.38	0.36	0.35	0.34	0.38
(Pounds/Day)	1.52	1.53	1.58	1.49	1.61	1.52	1.67	1.75	1.86	1.85	1.88	2.08	1.97	1.90	1.86	2.09
Per Capita MSW Disposal (Tons/Year)	0.71	0.68	0.62	0.61	0.66	0.61	0.63	0.66	0.62	0.60	0.67	0.70	0.71	0.62	0.65	0.56
(Pounds/Day)	3.90	3.70	3.41	3.34	3.62	3.36	3.44	3.60	3.41	3.29	3.67	3.82	3.91	3.40	3.57	3.07
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Generation	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%**
Diversion	28%	29%	32%	31%	31%	31%	33%	33%	35%	36%	34%	34%	34%	36%	34%	41%
Disposal	72%	71%	68%	69%	69%	69%	67%	67%	65%	64%	66%	66%	66%	64%	66%	59%

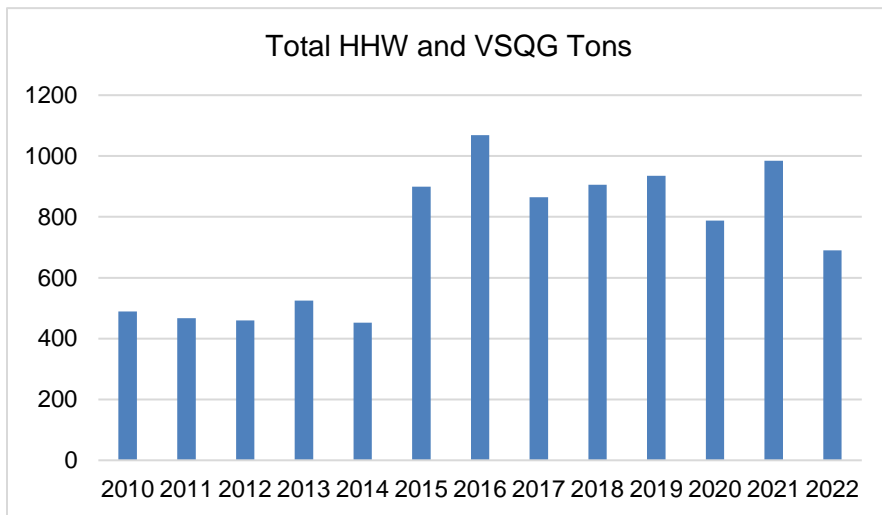
[1] Population Estimate, Vermont. US Census: <http://census.gov>

*See preface for changes made to Generation, Diversion, and Disposal calculations compared to past years.

** In 2022, this is a partial Generation of Diversion + MSW Disposal rather than complete Generation that also includes Other Disposal and Safe Management.

Table 8. Summary of historic hazardous waste collections and participation

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Total HHW and VSQG tons	467	460	525	452	899	1,069	865	906	935	788	984	690
% Participating VT Households	7%	9%	7%	7%	6%	8%	10%	9%	11%	7%	8%	6%
Pounds Collected per Household (avg.)	47	34	62	102	131	86	60	60	55	80	88	60



Figures 7. Trends in HHW and VSQG hazardous waste collected.

Table 9. Summary of historic mercury collections

	2014	2015	2016	2017	2018	2019	2020	2021	2021
# Mercury Lamps	205,155	233,820	191,060	158,079	209,400	186,652	144,751	159,750	200,002
# Mercury Thermostats	2,169	2,000	2,246	2,468	2,369	2,069	1,897	1,846	1,396

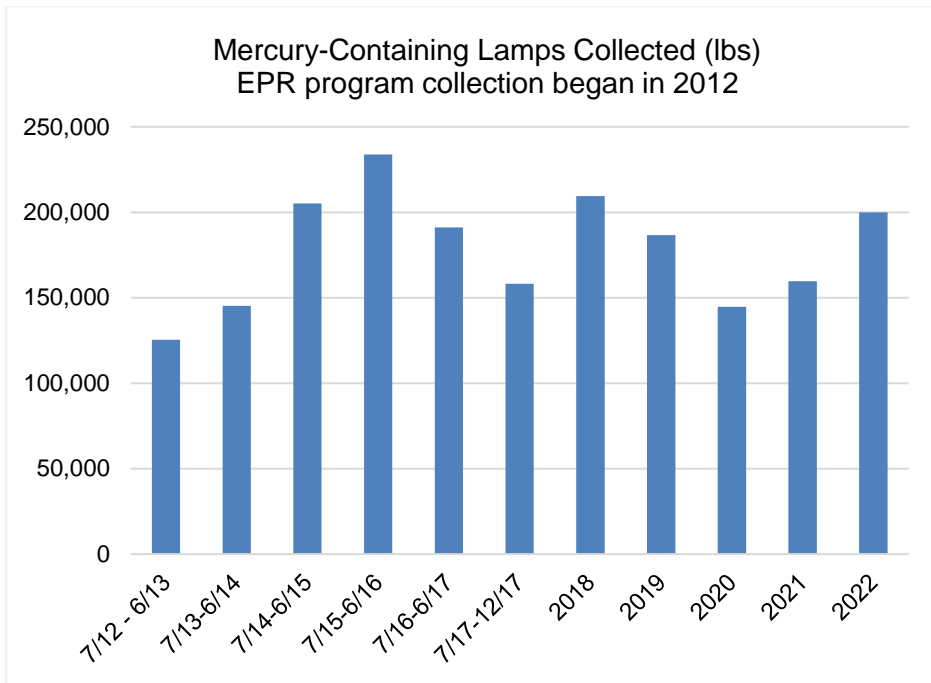


Figure 8. Trends in lamp collections

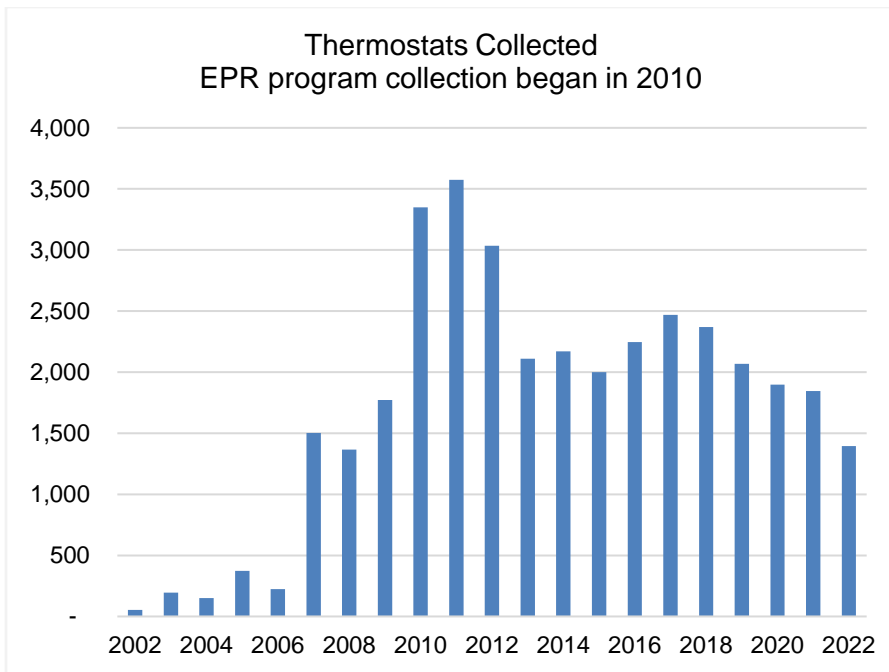


Figure 9. Trends in thermostat collections

Table 10. Summary of historic electronics collections

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Lbs Electronics	4,888,400	4,897,778	4,814,188	4,312,381	3,685,448	3,460,051	3,028,996	2,955,501	2,508,042

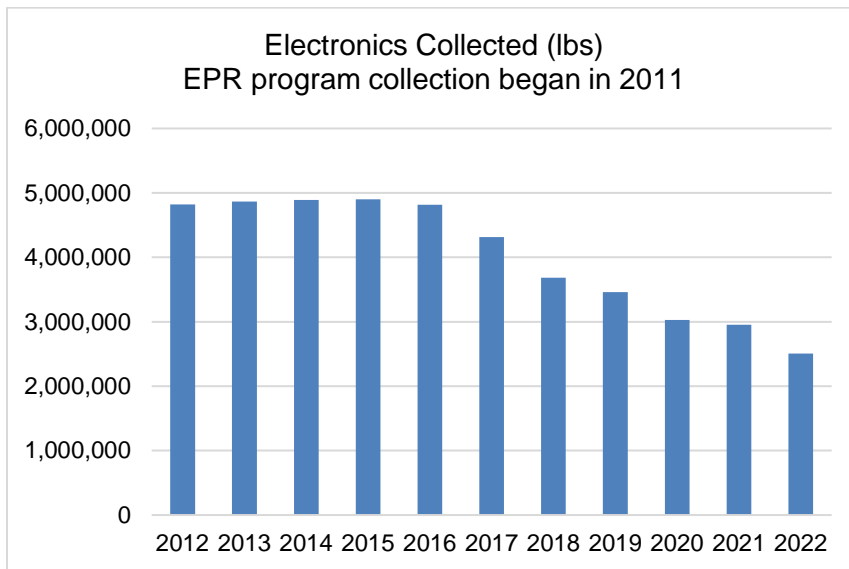


Figure 10. Trends in electronics collections

Table 11. Summary of historic battery collections

	2015	2016	2017	2018	2019	2020	2021	2022
Lbs Primary Batteries	3,350	64,366	81,381	94,424	113,451	101,275	148,340	149,884
Lbs Rechargeable Batteries	36,477	52,617	52,238	51,677	53,426	45,122	68,424	67,331

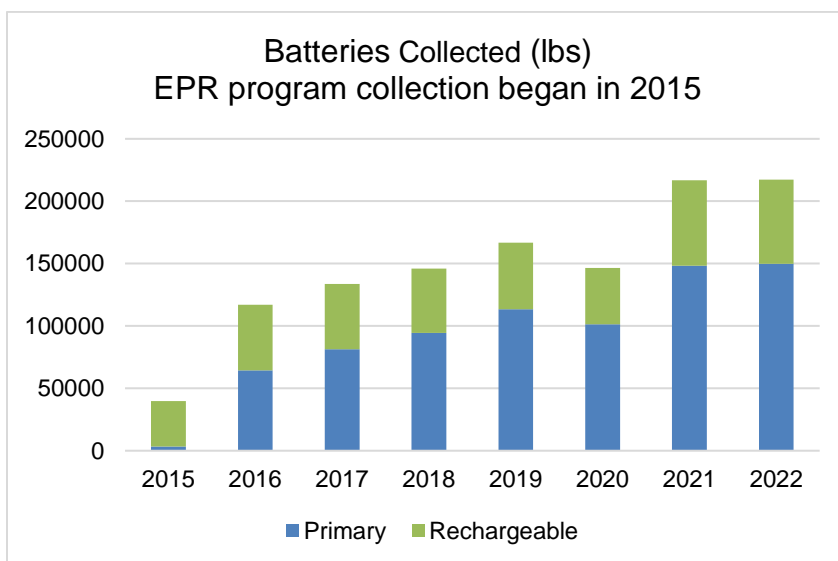


Figure 11. Trends in battery collections

Table 12. Summary of historic paint collections

	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Gallons of Paint	60,000	116,691	108,466	96,109	110,567	115,142	99,838	111,847	120,388

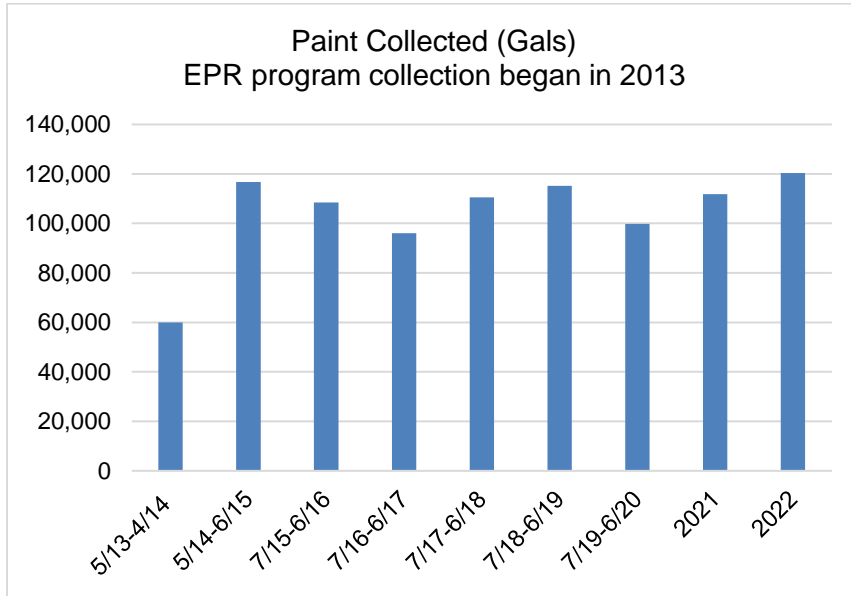


Figure 7: Trend in paint collections.

Table 13: Summary of recent tire collections

	2016	2017	2018	2019	2020	2021	2022
Tons Tires	4,315	2,733	4,274	3,878	3,551	3,712	4,634

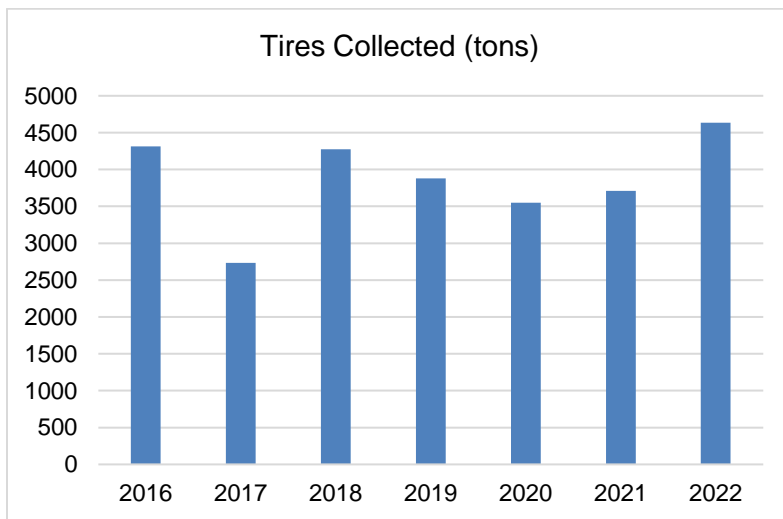


Figure 8: Trends in recent tire collections.

All Solid Waste Districts and Alliances, in alphabetical order

HHW/VSQG Material Collected (all materials in tons) [†]	Adison SWMD	Berlington County Solid Waste Alliance	Central Vermont SWMD	Chittenden SWMD	Lamoille SWMD	Londonderry Group	Mad River RMA	Mountain Alliance	Northwest Kingdom MMD	Northwest SWMD	Rutland County SWMD (excludes SWAG)	Solid Waste Alliance	Southern W/W Counties	White River Alliance	Wincham SWMD
	1 Acids	0.53	0.30	0.50	2.06	0.26	0.13	0.50	0.05	0.14	0.49	0.01	-	-	0.44
2 Aerosols	1.06	1.08	2.95	10.02	1.20	0.85	0.74	0.19	0.54	0.66	5.56	0.30	0.34	0.88	0.70
3 Bases	0.41	0.50	0.79	2.10	0.39	0.09	0.52	0.01	0.14	0.79	0.14	-	-	0.44	0.71
4 Fire Extinguishers	-	0.32	-	-	-	-	-	-	-	-	-	-	0.05	-	-
5 Flammables & Solvents	15.62	3.79	8.72	36.47	8.56	22.48	5.28	1.75	5.63	4.67	4.22	0.96	1.50	2.86	2.15
6 Glycols (Antifreeze)	1.48	-	-	6.04	-	-	-	-	-	1.00	-	-	-	-	1.25
7 Oxidizers	0.41	0.05	0.17	0.51	0.14	0.02	0.40	0.08	0.07	-	0.16	0.01	-	0.44	-
8 Lead Paint Chips & Debris	0.13	-	-	0.17	-	-	-	-	-	-	-	-	-	-	-
9 Paints – Latex	29.46	4.40	2.35	80.99	-	2.59	-	-	1.48	23.63	-	-	-	-	-
10 Paints – Oil	12.07	-	6.15	23.28	-	1.26	-	-	0.74	2.72	-	-	-	-	-
11 Paints – Oil + Latex, Mixed	-	-	-	-	-	-	1.48	-	-	-	17.55	2.04	4.60	-	18.63
12 Paints – Non-process Resins	7.37	-	8.35	14.81	2.28	-	1.76	0.98	3.32	2.43	0.22	1.25	-	0.74	-
13 Pesticides	1.66	1.05	3.36	9.38	1.68	0.95	1.66	0.20	0.61	1.97	3.32	0.30	0.74	0.88	1.17
14 Propane Tanks	2.39	0.54	-	-	-	-	-	0.02	-	-	1.17	-	-	-	-
15 Reactives	0.04	-	0.002	0.07	-	-	-	-	-	0.18	-	-	-	-	-
16 Toxics	0.13	0.01	-	0.15	-	-	0.02	-	-	-	-	-	-	-	-
17 Photo Chemicals	-	-	-	0.23	-	-	-	-	-	0.04	-	-	-	-	-
18 Waste Oil – Uncontaminated	12.24	-	-	12.34	-	-	-	-	-	5.60	4.17	-	0.83	-	-
19 Waste Oil – Contaminated	-	-	-	-	-	-	-	-	-	-	-	-	1.25	-	1.91
20 Waste Oil – Oily Debris	1.44	0.15	0.58	4.02	0.34	-	-	-	0.21	0.39	0.22	-	-	-	-
21 Waste Oil – Oil Filters	1.69	-	-	1.38	-	-	-	-	-	-	-	-	-	-	-
22 Oily Water	1.33	-	-	0.68	-	-	0.44	-	0.83	0.05	-	-	-	-	-
23 Mercury – Fluorescent Tubes	7.92	-	-	18.06	-	-	-	0.02	-	0.51	1.97	-	-	0.00	-
24 Mercury – Other Lamps	0.09	-	-	-	-	-	-	-	-	1.24	0.13	-	-	0.21	-
25 Mercury – Added Products	-	0.01	0.004	0.25	-	-	0.02	-	-	-	-	0.00	0.01	0.08	-
26 Mercury – Elemental	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27 Mercury – Compounds	-	-	-	-	0.01	-	-	0.00	-	0.04	-	-	0.01	-	-
28 Primary Batteries	3.80	0.13	-	23.09	-	-	0.08	0.02	-	3.65	1.58	-	-	0.06	-
29 Rechargeable Batteries	4.25	0.09	-	-	-	-	0.08	-	-	0.73	1.18	-	-	-	-
30 Lead-Acid Batteries	13.20	0.03	-	2.59	-	-	0.13	-	-	-	1.17	-	-	0.06	-
31 Other misc. products	0.28	0.29	-	14.23	0.11	1.18	0.15	0.06	0.02	1.32	5.56	-	-	-	-
Demographics															
Occupied Households in Area ^{††}	14,625	14,572	23,212	69,052	11,944	1,656	5,484	5,237	19,964	21,198	20,750	5,901	14,076	3,714	16,430
Program Profiles															
Number of Events Held	0	3	5	6	3	2	1	2	9	6	34	3	0	2	2
# of households served	2535	613	603	6975	489	149	424	75	808	1696	1430	74	200	182	353
# of businesses served	106	0	4	580	9	2	9	0	2	565	63	1	9	5	13
% household participation	17%	4%	3%	10%	4%	9%	8%	1%	4%	8%	7%	1%	1%	5%	2%
Total HHW/VSQG (tons)	118.96	12.72	33.92	262.90	14.98	29.53	13.24	3.35	13.72	52.09	48.30	4.85	9.34	7.10	26.89
Total VSQG Collected (tons)	9.68	-	2.90	90.66	1.29	11.80	0.70	-	0.42	0.20	-	-	-	-	0.78
Total HHW Collected (tons)	109.28	12.72	31.02	172.24	13.69	17.73	12.54	3.35	13.30	51.89	48.30	4.85	9.34	7.10	26.11
Avg. HHW/per household (tons)	0.04	0.02	0.05	0.02	0.03	0.12	0.03	0.04	0.02	0.03	0.03	0.07	0.05	0.04	0.07
Avg. VSQG/per business (tons)	0.09	-	0.73	0.16	0.14	5.90	0.08	-	0.21	0.00	-	-	-	-	-

SEE VERMONT TOTALS FOR EACH MATERIAL ON PAGE 2

[†] All reported materials are converted to tons using VT Solid Waste Program Combined HHW Conversion Factors. See cover page for details.

^{††} Household estimates were derived from the US Census Bureau 2020 Decennial Census (data.census.gov) (total population and occupied household units by county subdivision)

All Independent Towns, Shared HHW Events

	HHW/VSQG Material Collected (all materials in tons) [†]	Shared HHW Events							VERMONT TOTALS
		Carson shared with Lennington	Coverly, Lowell and Newport Cky	Fairfax	St. Johnsbury shared with Burke	Greater Upper Valley SMD shared with Hartford	Whitingham	Winhall	
1	Acids	0.06	0.05	0.07	0.10	0.63	-	0.14	6.8
2	Aerosols	0.12	-	0.23	0.33	1.78	0.02	0.27	29.8
3	Bases	-	0.20	0.07	0.20	0.83	0.03	0.14	8.5
4	Fire Extinguishers	-	-	-	0.01	-	-	-	0.4
5	Flammables & Solvents	-	2.20	3.20	0.83	5.38	0.03	2.74	139.0
6	Glycols (Antifreeze)	-	0.06	-	-	-	-	-	9.8
7	Oxidizers	-	0.01	0.02	0.12	0.23	0.00	0.14	3.0
8	Lead Paint Chips & Debris	-	-	-	-	-	-	-	0.3
9	Paints -- Latex	-	-	-	-	-	-	-	144.9
10	Paints -- Oil	-	0.35	-	-	-	-	-	46.6
11	Paints -- Oil + Latex, Mixed	0.40	0.44	-	-	-	1.34	-	46.5
12	Paints -- Non-process Resins	0.01	0.55	1.00	0.60	4.06	-	0.12	49.8
13	Pesticides	0.06	0.50	0.45	0.10	3.67	0.06	0.20	34.0
14	Propane Tanks	-	-	0.08	0.05	0.02	-	-	4.2
15	Reactives	-	-	-	0.00	0.13	-	-	0.4
16	Toxics	-	-	-	-	-	-	-	0.3
17	Photo Chemicals	-	-	-	-	-	-	-	0.3
18	Waste Oil -- Uncontaminated	0.22	-	-	-	-	-	-	35.4
19	Waste Oil -- Contaminated	-	-	-	-	-	-	-	3.2
20	Waste Oil -- Oily Debris	0.63	0.22	-	0.30	-	-	0.21	8.7
21	Waste Oil -- Oil Filters	-	-	-	-	-	-	-	3.1
22	Oily Water	-	-	-	-	-	-	-	3.3
23	Mercury -- Fluorescent Tubes	-	0.04	0.07	-	-	-	0.12	28.7
24	Mercury -- Other Lamps	-	0.03	-	-	-	-	-	1.7
25	Mercury -- Added Products	-	0.01	-	-	0.04	-	0.42	0.8
26	Mercury -- Elemental	-	-	-	-	0.02	-	-	0.0
27	Mercury -- Compounds	-	-	0.00	0.00	-	-	-	0.1
28	Primary Batteries	-	0.04	0.10	0.07	-	0.15	-	32.8
29	Rechargeable Batteries	-	-	-	0.04	-	0.01	-	6.4
30	Lead-Acid Batteries	-	0.01	-	0.01	-	-	-	17.2
31	Other misc. products	0.05	-	-	0.03	0.43	0.00	0.02	23.7
Demographics									
	Occupied Households in Area ^{††}	455	3,912	1,890	3,804	12,951	567	496	271,890
Program Profiles									
	Number of Events Held	4	2	2	2	3	2	2	95
	# of households served	32	186	250	113	305	20	45	17,557
	# of businesses served	4	3	-	-	5	-	1	1,381
	% households served	7%	5%	13%	3%	2%	4%	9%	6%
Total HHW/VSQG (tons)		1.54	4.70	5.27	2.78	17.20	1.65	4.50	689.5
	Total VSQG Collected (tons)	-	0.72	-	-	-	-	-	119.2
	Total HHW Collected (tons)	1.54	3.98	5.27	2.78	17.20	1.65	4.50	570
	Avg. HHW/per household (tons)	0.05	0.02	0.02	0.02	0.06	0.08	0.10	0.03
	Avg. VSQG/per business (tons)	-	0.24	-	-	-	-	-	0.09

[†] All reported materials are converted to tons using VT Solid Waste Program Combined HHW Conversion Factors. See cover page for details.

^{††} Household estimates were derived from the US Census Bureau 2020 Decennial Census (data.census.gov) (total population and occupied household units by county subdivision)

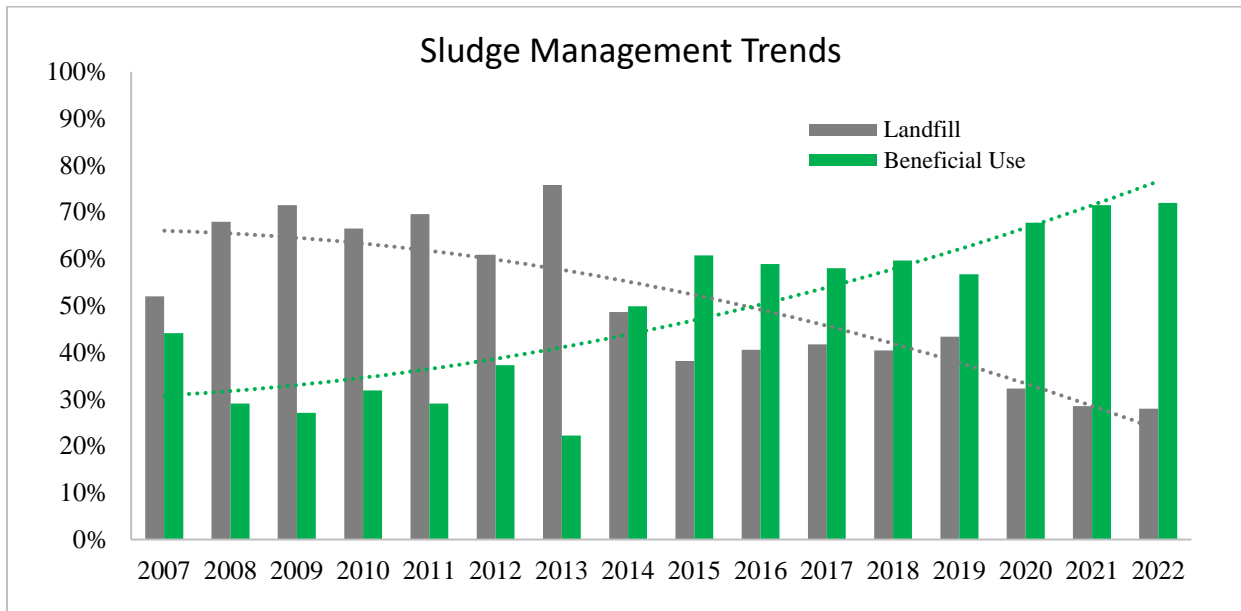


Figure 9: Vermont wastewater sludge management trends from 2007 to 2022 comparing percentages of sludges landfilled (gray bars) versus beneficially used/recycled as biosolids (green bars).

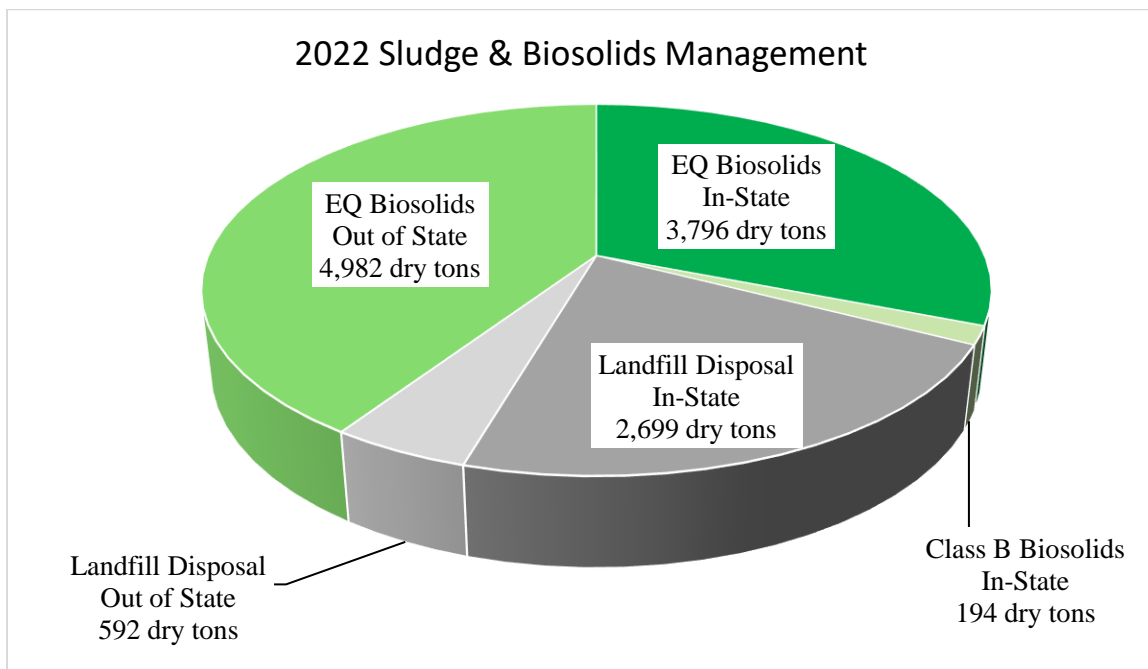


Figure 10: Vermont wastewater sludge management in 2022 showing dry tons of sludge land applied in-state as Class B biosolids (light green), used as Exceptional Quality (EQ) biosolids in-state and out-of-state (green), and landfilled in-state and out-of-state (gray). Nearly 70% of the sludge produced by Vermont wastewater facilities is ultimately recycled as EQ biosolids and used as a soil amendment in Vermont or in neighboring states.

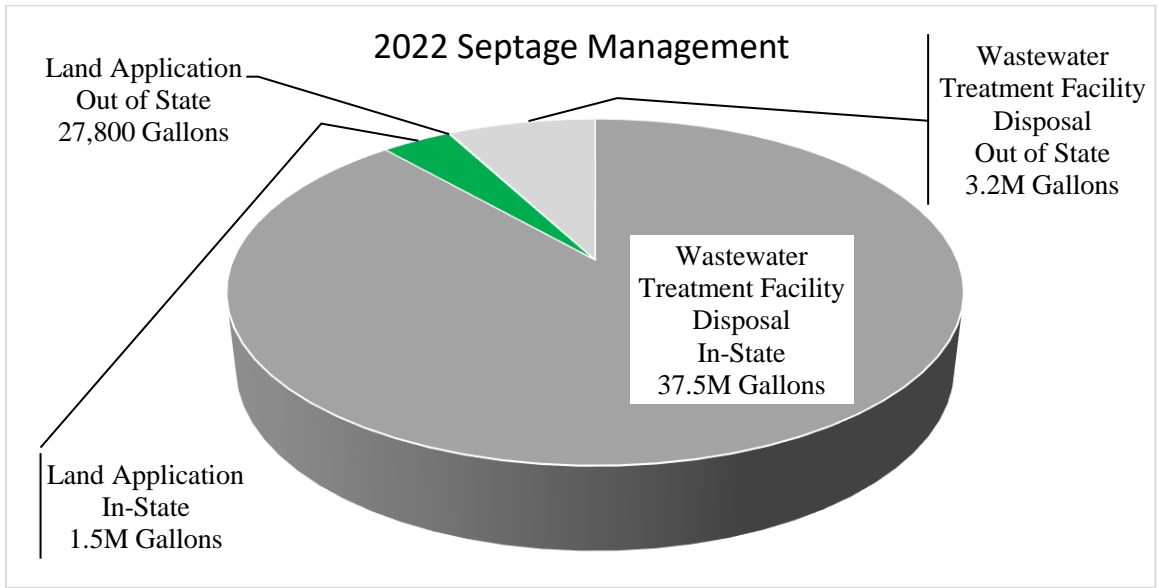


Figure 11: Vermont septage management in 2022 showing gallons of septage land applied (green) and hauled to wastewater facilities (gray) in-state and out-of-state. Over 42 million gallons of septage was managed in 2022. Due to recent declines in land application, 96% of septage produced by Vermont residents was hauled to wastewater treatment facilities for disposal.