



2018 Annual Solid Waste Report for CY2017

Commonwealth of Virginia



June 2018

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Solid Waste Managed in Virginia During Calendar Year 2017

EXECUTIVE SUMMARY

Section 10.1-1413.1 of the Code of Virginia requires the Department of Environmental Quality (DEQ) to prepare a report by June 30 of each year describing the amount of solid waste disposed of in the Commonwealth during the preceding calendar year. Facilities that have solid waste management permits are required to provide DEQ with information to prepare this report. As of May 4, 2018, 204 permitted facilities provided information on their activities for calendar year 2017 for this report.

Based on the facilities' reports, a total of 21,591,302.02 tons of solid waste was received at Virginia's permitted solid waste management facilities during calendar year 2017. Of this total, 16,484,625.60 tons originated in the Commonwealth and 5,106,676.42 tons originated from other jurisdictions. The total amount of solid waste received decreased by 2.02% or 444,153.03 tons compared to 2016.

Municipal solid waste (MSW) constituted 13,019,050.21 tons of the total amount of solid waste received during calendar year 2017. Of the total MSW received, 9,588,976.62 tons originated in the Commonwealth and 3,430,073.59 tons originated from other jurisdictions.

Five jurisdictions accounted for 98.51% of all waste received from out-of-state sources: Maryland (44.57%); Washington, D.C. (20.72%); New York (18.81%); North Carolina (9.75%); and New Jersey (4.66%).

During calendar year 2017, the total solid waste received from out-of-state decreased by 16.28%. MSW received from out-of-state decreased by 1.19% compared to 2016 amounts. Construction/demolition/debris (CDD) increased by 3.68% and industrial waste decreased by 67.48% compared to 2016 amounts. Total out-of-state solid waste decreased as a result of a 67.48% decrease in out-of-state industrial waste from 1,131,975.22 to 368,094.58 tons. For waste originating in Virginia during the same period, the total solid waste, MSW, and construction/demolition/debris (CDD) received increased by 3.45%, 2.43%, and 11.18% respectively compared to 2016 amounts. Industrial waste decreased by 4.51% compared to 2016.

Of the solid waste managed in Virginia during the year, 75.62% or 13,551,944.22 tons were landfilled on-site, 6.60% or 1,182,296.00 tons were incinerated on-site, and the rest was managed by other means (see Table 18). Of all solid waste received at Virginia facilities during the year, 60.30% was MSW, 22.08% was CDD waste, 5.51% was industrial waste and the remainder was other types of waste (see Table 19).

Permitted solid waste management facilities reported that 11.81% of the waste they managed was diverted from disposal by recycling or mulching; 0.96% of the total waste managed was composted.

Permitted facilities are required to report on their available capacity and the expected life of the facilities based on current disposal rates. This information shows that at current rates, the remaining available landfill capacity is as follows: MSW – 23.1 years; CDD – 12.9 years; and non-captive industrial – 15.0 years. These projections do not account for population increases, changes in waste generation, or the closing of older MSW disposal units pursuant to statute.

At the option of the facility owner, Virginia Code § 10.1-1413.1 provides that the data collected may include an accounting of the facility's economic benefits to the locality where the facility is located. No facilities provided such information for calendar year 2017.

I Introduction

This report has been prepared in accordance with Virginia Code § 10.1-1413.1, which requires DEQ to prepare a report by June 30 of each year describing the amount of solid waste disposed of in the Commonwealth during the preceding calendar year. All permitted facilities (except for captive waste management facilities) that treat, store or dispose of solid waste are required to provide DEQ with information in their possession as is reasonably necessary for DEQ to prepare this report. The requirements for reporting are set forth in the Virginia Administrative Code, 9 VAC 20-81-80.

II Reporting Procedures

For each category of solid waste, permitted solid waste facilities in Virginia were asked to report the amount of waste that they received, amount of waste mined¹, the method by which the waste was managed, the jurisdiction where the waste originated, if known, and the facility's remaining capacity. A copy of the reporting table, DEQ Form 50-25, for providing information to DEQ is provided as Attachment 1.

The facilities identified amounts of solid waste by each of the following categories:

- municipal solid waste (MSW)
- construction/demolition/debris (CDD)
- industrial waste
- regulated medical waste (RMW)
- vegetative and yard waste (VW/YW)
- incineration ash
- sludge other than land applied in accordance with Virginia Code 62.1-44.19:3
- tires
- white goods (e.g., refrigerators, washing machines)
- friable asbestos
- petroleum-contaminated soil (PCS)
- other waste

The facilities also reported on each of the following methods of waste management:

- recycled onsite
- composted onsite
- landfilled onsite
- incinerated onsite
- sent offsite to be recycled
- sent offsite to be treated, stored or disposed
- stored onsite at the beginning of the reporting period
- stored onsite at the end of the reporting period
- mulched
- other

¹ Landfill mining is the excavation of previously landfilled materials.

Facilities submit this data online or by paper copy to the appropriate DEQ Regional Office. Facilities may log online at the Virginia Solid Waste Information and Assessment (SWIA) webpage to submit data at <http://www.deq.state.va.us/Programs/LandProtectionRevitalization/SolidHazardousWasteRegulatoryPrograms/SolidWaste/SolidWasteInformationandAssessmentProgram.aspx>.

For the facilities that provided information, 4.4% (9 facilities) submitted paper copies and 95.6% (195 facilities) submitted the information on-line.

This report does not include the waste management activities from captive waste management facilities because they are statutorily exempt from the reporting requirements. A captive facility is one that is located on property owned or controlled by the generator of the waste. Most captive waste management facilities in Virginia are industrial landfills or regulated medical waste facilities. As a result, the reported amounts of industrial waste, regulated medical waste and sludge represent only the portion that is managed in off-site facilities. In addition, this report does not reflect tires managed under the Waste Tire Trust Fund at facilities that do not require a permit.

III. Receipt of Assessment Reports

By regulation, facilities must submit their reportable data by March 31 each year. Facilities are required to submit a separate reporting table for each jurisdiction from which they received waste during the prior year. Information from reporting tables received on or before May 4, 2018, has been included in this report. For 2017, 204 permitted facilities reported their activities. These facilities submitted 365 separate reporting tables, representing waste received from 31 states and jurisdictions (including Virginia and Washington, D.C.). One permitted facility required to report did not submit for 2017. Last year, 202 facilities reported their activities for 2016.

IV. Discussion of Reported Waste Management Activities and Capacity Information

Table 1 shows how the total solid waste received was managed by all facility types.² Table 2 lists the jurisdiction of origin of waste. Tables 3, 5, and 7 show how Municipal Solid Waste Sanitary Landfills, Construction/Demolition/Debris Landfills, and Industrial Landfills managed solid waste.³

Tables 9 – 17 show how other facility types (Incinerators, Transfer Stations, Material Recovery Facilities (MRF), Composters, and Regulated Medical Waste) managed the waste they received and a list of submitting facilities. Table 18 shows how the total waste stream was managed and Table 19 shows the composition of the total waste stream.

Permitted facilities that treat, store or dispose of solid waste are required to report the available capacity, expected life and current disposal rates. The remaining capacity and life, and a list of

² When referring to information from Table 1, “waste received” refers to information from the first column, and “waste managed” refers to information from the remaining columns on Form DEQ 50-25 except “mined materials” or as noted. The amount of waste “received” for each type of waste may not match the sum of the reported amounts identified for each method of waste management. This reflects information as submitted by facilities in the reporting tables. In particular, incinerators may properly include the ash that they generate as waste that is “sent offsite,” and not include it as waste that is “received” at that facility.

³ Some columns and rows found in Table 1 do not appear in some of these tables. Rows and columns that do not have reported data were not used by any of the reporting entities; *i.e.* MSW Landfills do not incinerate waste so the column is not included; MSW landfills do not accept regulated medical waste so the row is not included.

submitting facilities are in Tables 4, 6, and 8.⁴ Calculations for remaining years of landfill capacity do not account for population changes, changes in waste generation, or the future closings of older MSW disposal units under Virginia Code § 10.1-1413.2. Also, calculations do not include facilities that have not been built and are not accepting waste for which permits may have been issued.

Figure 1 compares the total amount of waste received from 2010 through 2017 at facilities from Virginia and out-of-state jurisdictions. Figure 2 compares municipal solid waste received from 2010 through 2017 from Virginia and out-of-state sources.

V. Reports of Economic Benefits

At the option of the facility owner, Virginia Code § 10.1-1413.1 provides that the data collected may include an accounting of the facility's economic benefits to the locality where the facility is located. This may include the value of disposal and recycling facilities provided to the locality at no cost or reduced cost, direct employment associated with the facility, and other economic benefits resulting from the facility during the preceding calendar year. No facilities provided such information for 2017.

VI. Waste Diversion and Recycling

SWIA data is collected from solid waste permitted facilities. Facilities submit the total tonnage received and how the amounts were managed (landfilled, mined, recycled on-site, recycled off-site, mulched, incinerated, other, composted, or stored). Permitted solid waste management facilities reported that 11.81% (2,116,759.62 tons) of the total waste they managed was diverted from disposal by recycling or mulching. Facilities composted 0.96% (171,970.41 tons) of the total waste managed. Table 20 shows for each SWIA category of waste the total amount of Virginia and out-of-state waste managed, total amount diverted and how the material was managed. In addition, Tables 3, 5, 7, 9, 11, 13, and 15 show how the various facility types managed the waste types.

Most recycling occurs at facilities other than permitted waste management facilities. Local governments provide more complete information on the recycling of waste generated in Virginia. For more detailed information about recycling rates in Virginia see Calendar Year 2016 Virginia Annual Recycling Rate Report:

<http://www.deq.virginia.gov/Programs/LandProtectionRevitalization/RecyclingandLitterPreventionPrograms.aspx>. The annual recycling report for calendar year 2017 will be issued later this year.

⁴ Facilities report available capacity in cubic yards. The available capacity is estimated using the following conversion factors: 1,000 lbs. of MSW = 1 cu. yd.; 1,200 lbs. of CDD waste = 1 cu. yd.; and 1,000 lbs. of industrial waste = 1 cu. yd. The available capacity for individual facilities may vary, depending on factors such as a facility's compaction rate and use of daily cover materials.

Table 1 – Solid Waste Managed in Virginia for All Reporting Facilities in Tons – 2017

Waste Type	Total Waste Received ⁵	Mined Materials	Onsite Management of Waste						Sent Offsite To Be:		Stored Onsite	
			Landfilled Onsite	Recycled Onsite ⁶	Composted Onsite	Incinerated	Mulched	Other ⁷	Recycled Offsite	Treated, Stored, Disposed	Beginning of Year	End of Year
Municipal Solid Waste	13,019,050.21	25,487.43	8,672,915.05	894.92	224.54	1,165,350.67	0	0	148,117.85	3,070,135.86	21,925.27	8,824.02
Construction/Demolition/Debris	4,767,306.07	90,557.00	2,919,111.24	437,871.65	0	0	43,315.72	51569.21	221,255.48	922,182.21	234,750.27	497,307.84
Industrial Waste	1,189,888.29	0	848,007.60	233,407.69	26,437.00	16,945.33	0	879.49	1,538.88	62,672.30	0	0
Incineration Ash	728,628.03	0	400,194.23	228,599.89	0	0	0	95989.55	6,725.46	296,512.20	0	0
Other Waste	582,528.48	0	31,877.76	82,480.19	10,131.22	0	76.95	59260.1	318,881.03	82,152.87	4,982.37	12,350.70
Petroleum Contaminated Soil	486,178.01	0	403,986.37	16,868.06	0	0	0	33381	27,565.00	3,178.00	7,400.42	8,600.00
Vegetative/Yard Waste	432,370.19	0	41,850.76	12,494.57	117,042.75	0	200,510.73	14980.817	22,515.61	18,231.79	99,696.58	104,439.75
Sludge	247,356.50	0	227,785.95	0	18,134.90	0	0	0	0	1,435.65	0	0
Tires	100,075.06	0	766.11	27,195.70	0	0	0	2410.04	61,825.51	6,903.48	1,377.83	2,352.05
White Goods	24,789.05	0	36.51	586.27	0	0	0	0	24,032.47	37.64	462.50	558.66
Regulated Medical Waste	7,458.12	0	0	0	0	0	0	4425.318	0	3,032.80	0	0
Friable Asbestos	5,674.01	0	5,412.64	0	0	0	0	0	0	252.79	3.54	12.12
Total for 2017	21,591,302.02	116,044.43	13,551,944.22	1,040,398.93	171,970.41	1,182,296.00	243,903.40	262,895.53	832,457.29	4,466,727.59	370,598.78	634,445.14
Total for 2016	22,035,437.05	199,158.14	13,311,000.10	1,205,015.82	151,688.82	2,011,222.83	231,298.19	467,687.42	848,353.76	4,485,887.34	311,185.44	362,442.79

⁵ The amount of “Total Waste Received” and “Stored Onsite at the Beginning of the Year” may not precisely match the sum of the reported amounts for the remaining columns (i.e., each method of managing the waste). This difference reflects information submitted in the reporting tables. In particular, incineration ash generated by an energy recovery facility or incinerator may be listed as “sent offsite to be treated, stored, or disposed” even though it was not received as ash at that facility. The total waste managed may be greater than the waste received due to ash generated at a facility. Vegetative/Yard Waste may be composted to produce a product that is not managed as a waste.

⁶ The majority of recycling takes place at facilities that do not require a permit from the Department and were not required to submit data for this report. Therefore, the amounts shown in this column represent a substantial underestimate of the true recycling rate in the Commonwealth. Table 20 provides more information. The annual recycling rate report for calendar year 2017 will be issued later this year.

⁷ “Other” methods of management may include steam sterilization of medical waste, approved use of shredded tires, and thermal treatment of petroleum contaminated soils, among others.

