

## Maryland

### Wastewater & Infrastructure

	2004 Data	2018 Data	
<b>Total Number of WRRFs:</b>	<b>217 (survey), 161 CWNS</b>	43	
<b>WWTP &amp; Biosolids Infrastructure Totals</b>			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	3	3	-----
Total number of your state's WWTPs sending to those Separate Preparers:	0	~15	-----
Number of operating sludge incinerators in your state (total):	1	0	-----
Fluidized bed:	no data	0	-----
Multiple hearth:	no data	0	-----
Number of Part 258 landfills in your state accepting sewage sludge:	data not requested for 2004	several	-----
Number of WWTPs in your state with industrial pre-treatment programs:	data not requested for 2004	all the larger WRRFs	-----
Number of WWTPs in your state with <i>sludge</i> lagoons:	data not requested for 2004	a few	-----
<b>Wastewater Flow Totals</b>			
Total statewide average daily wastewater flow (MGD):	data not requested for 2004	425	-----
Total statewide WWTP <i>design</i> capacity for wastewater flow (MGD):	data not requested for 2004	no data	-----
Total statewide average daily <i>dry weather</i> flow (MGD):	data not requested for 2004	no data	-----
<b>Other Totals</b>			
Number of documented odor & nuisance complaints received by state in 2018 related to biosolids transportation and use or disposal outside of the gates of the WWTP:	data not requested for 2004	no data	-----
Number of WWTPs involved in those complaints:	data not requested for 2004	no data	-----
Percent of population served by on-site systems (e.g. septic systems):	no data	20%	-----

Seiple et al. 2020 tallied 266 WRRFs in MD; the data here are from 43 of the largest facilities, which treat ~93% of the state's total wastewater flow (and presumably manage an equivalent portion of the state's wastewater solids). More details below. • Separate preparers include the Synagro-operated heat drying facility and the Veolia-operated compost facility that each process a portion of the Baltimore Back River WWTP solids. Maryland Environmental Services, a quasi-governmental organization, operates water resource recovery facilities (WRRFs) and manages biosolids programs and may, in some cases, be considered a separate preparer. • Much data are unavailable for Maryland. The estimate of the population relying on septic systems – 20% – is an NBDP default estimate.

### Biosolids Use and Disposal

	2004 data were originally reported in wet U.S. tons; they are converted here for comparison, assuming 22% solids (NBDP's default value): Dry Metric Tons	Dry metric tons	
<b>UNITS:</b>			
<b>BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total):</b>		<b>113,000</b>	
<b>Summary</b>			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To...
			Quantity of Biosolids
Beneficial Use (applied to soils, not including ADC)	129	54,347	39
Disposal & Alternative Dispositions	53	15,269	19
Other	35	53,939	4
<b>TOTAL</b>	<b>217</b>	<b>123,555</b>	<b>62</b>
			<b>113,277</b>
<b>Beneficial Use</b>			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To...
			Quantity of Biosolids
Agricultural (EQ, Class A, & Class B)	99	33,341	33
Forestland (EQ, Class A, & Class B)	0	0	0
Reclamation (EQ, Class A, & Class B)	20	8,754	1
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)	10	12,252	5
<b>Beneficial Use Subtotal</b>	<b>129</b>	<b>54,347</b>	<b>39</b>
Long-term storage	35	53,939	4
			4,388

**NOTE:** Quantity of sewage sludge or biosolids used or disposed means the quantity that goes out the gate of the WWTPs. Quantities are in the units (the form of measurement) indicated above.

Data related to Maryland (MD) biosolids management are mostly from the 36 biosolids programs that reported to the U.S. EPA ECHO database for 2018. Seven WRRFs responded to the current NBDP survey, and two of those were additional, for a total of 38 sets of biosolids program data. Additional WRRFs > 5 MGD were researched online and added to the list. All told, the 40+ WRRFs represented in the data presented here represent ~93% of the state's wastewater flow. Additional information was compiled from online resources & contacts with experts in the state. • For corroboration, NBDP compared these data with a table of annual biosolids use and disposal published by the Maryland Department of Environment (MDE). Those data are in wet U.S. tons. Using NBDP's default solids content of 22% average, the total biosolids used or disposed reported here – 118,000 dry metric tons (dmt) – is about 4,000 dmt more than reported by MDE, the difference being that MDE reports lower tonnages of landfill disposal and more Class A EQ distribution. The most likely cause for this discrepancy is the default average % solids used in interpreting the MDE data; therefore, the NBDP analysis is relied on for the data reported here. Another corroboration is that, for 2019, MDE data show 108,000 dmt total statewide. • The NBDP lists stored biosolids here, but that tonnage is not included in the totals used or disposed.

U.S. EPA ECHO data include the tonnages of biosolids land applied. However, they do not always distinguish between bulk land application on agricultural lands vs. reclamation sites vs. marketing & distribution of Class A EQ products. Therefore, in instances - such as the Baltimore WRRFs - additional information was needed. Checking with local experts, NBDP learned that, for Baltimore's Back River and Patapsco, all the heat-dried biosolids was land applied in agriculture and that likely all of the composted biosolids was distributed and marketed. • Land reclamation has been a significant outlet for recycled biosolids in some years, with most of the quantity given here for 2018 generated at the WRRF in Westernport and applied on former strip mines in West Virginia.

Number of acres to which biosolids were applied:	no data	no data
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### Disposal & Alternative Dispositions

	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids
<b>Landfill (total)</b>	52	11,306	17	11,799
Burial	data not requested for 2004	data not requested for 2004	17	11,799
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	0	0
<b>Surface Disposal</b>	0	0	2	2,237
<b>Incineration</b>	1	3,963	0	0
<b>Cement kiln or industrial furnace</b>	data not requested for 2004	data not requested for 2004	0	0
<b>Deep well injection</b>	data not requested for 2004	data not requested for 2004	0	0
<b>Gasification</b>	data not requested for 2004	data not requested for 2004	0	0
<b>Pyrolysis</b>	data not requested for 2004	data not requested for 2004	0	0
<b>Disposal &amp; Alternative Dispositions Subtotal</b>	53	15,269	19	14,036
<b>TOTAL</b>	217	123,555	62	113,277

Landfill disposal data are mostly from the U.S. EPA ECHO database and two NBDP survey responses and are considered reliable.  
 • Surface disposal was reported by the Mattawoman and Westminster WRRFs; both produced Class B biosolids.

### Biosolids Quality Summary

	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids
<b>Class A EQ</b>	10	12,252	4	38,264
<b>Other Class A</b>	0	0	14	15,475
<b>Class B</b>	119	42,095	28	45,259
<b>Other (no data, etc.)</b>	88	69,208	13	14,279
<b>TOTAL</b>	217	123,555	59	113,277

**NOTE:** For "number of entities," the total may not match because some entities go to more than one use or disposal.

Class A EQ and Class A biosolids production is large & increasing in MD, led by the composting and heat drying operations of the two Baltimore WRRFs and the upcoming transition from lime stabilization to thermal hydrolysis & anaerobic digestion at the large WSSC biosolids facility in suburban Washington, DC. NEFCO creates heat-dried Class A EQ biosolids for the Cumberland WRRF in western Maryland. • The "unkown" tonnage likely includes some Class A and Class B biosolids as well as the solids that went to landfill.

### Biosolids Treatment Practices - No data available