



STATE BIOSOLIDS SURVEY

2018 data
conducted 2020-2021
biosolidsdata.org

Illinois

Infrastructure & Wastewater

	2004 Data	2018 Data	
Total Number of WWTPs:	557 (survey), 721 CWNS	509 (Seiple et al., 2020); 460 solids producers (IL EPA 2009)	
WWTP & Biosolids Infrastructure Totals			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	0	1	*****
Total number of your state's WWTPs sending to those Separate Preparers:	0	1	*****
Number of operating sludge incinerators in your state (total):	0	0	*****
Fluidized bed:	0	0	*****
Multiple hearth:	0	0	*****
Number of Part 258 landfills in your state accepting sewage sludge:	data not requested for 2004	38	*****
Number of WWTPs in your state with industrial pre-treatment programs:	data not requested for 2004	no data	*****
Number of WWTPs in your state with <i>sludge</i> lagoons:	data not requested for 2004	many	*****
Wastewater Flow Totals			
Total statewide average daily wastewater flow (MGD):	data not requested for 2004	2,312	*****
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	*****
Other Totals			
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%	*****

The one identified separate preparer is the MBM (Veolia NA) facility that heat dries & pelletizes a portion of Chicago solids. There are many contract haulers and land appliers that operate land application programs for WRRFs. • Landfill numbers: <https://www2.illinois.gov/epa/topics/waste-management/Pages/default.aspx> • Total statewide daily flow is from Seiple et al., 2020. • Default NBDP estimate of percent of population on septic systems.

Biosolids Use and Disposal

UNITS:	Dry U.S. tons	Dry U.S. tons	
BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total): 305,000			
Summary			
	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)	364	203,618	481
Disposal & Alternative Dispositions	77	124,877	25
Other	116	19,568	19
TOTAL	557	348,063	525
			305,074
Beneficial Use			
	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)	348	178,968	321
Forestland (EQ, Class A, & Class B)	0	0	0
Reclamation (EQ, Class A, & Class B)	6	22,771	1
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)	10	1,879	159
Beneficial Use Subtotal	364	203,618	481
Long-term storage	116	19,568	many, including MWRDGC
			28,000
Number of acres to which biosolids were applied:	data not collected		no data

NOTE: Quantity of sewage sludge or biosolids used or disposed means the quantity that goes out the gate of the WWTPs. Use the units (the form of measurement) you chose above.

IL EPA data showed ~350,000 dry U.S. tons (dt) of solids *produced* in 2009. In 2011, IL EPA reported ~370,000 dt solids *produced*. This is the most recent comprehensive state compilation available. Here the NBDP is counting the solids *used or disposed of*. Each year, Chicago stores large amounts (10,000s tons) of solids. For example, IL EPA reported that, in 2011, 25,070 dt of solids went into storage. 2004 data reported at left here were likely the solids *produced*, and there seems to be a small downward trend in total solids produced, from ~348,000 in 2004, ~350,000 in 2009, and ~370,000 dt in 2011 to ~305,000 in 2018 (290,000 reported in ECHO data, extrapolated upward), which may be due to annual variation and/or increased volumes being treated by anaerobic digestion and long-term drying that destroy solids. Overall, these data on total solids *produced* are reasonably consistent.

ECHO data from 158 IL WRRFs for 2018, as well as precise data from MWRDGC, provide the basis for these numbers. An extrapolation factor of 115% was applied based on compilation of additional data beyond the ECHO data. The ECHO data alone showed 117,532 dry U. S. tons were land applied as Class B biosolids. MWRDGC reports that much of its Class A product goes to agriculture too; thus, it is assumed that 80% of the 78,026 dt (62,421 dt) of Class A land applied biosolids reported in ECHO went to agriculture. It is also assumed that, of the "Class B other" reported in ECHO, 50% (3,409 dt) went to agriculture eventually. Extrapolations for facilities that did not report, including assuming that surface disposal did not increase but those solids went to Class B land application and that Class A only increased a small amount and 2,000 dt of that went to Class B land application, bring the total land applied in agriculture to ~211,300 dt. This does not include what MWRDGC's 2018 report notes: "[in 2018] a total of 1,727 DT of biosolids generated at the Calumet WRP was applied as final cover at the Land and Lakes Landfill, Dolton, Illinois." That is included here as land reclamation. • Class A EQ distribution is assumed to be 20% of the "Class A EQ land applied" reported in ECHO, a total of 15,805 dt. It is assumed that extrapolating for facilities that did not report would overestimate the Class A EQ total, so 2,000 dt of the extrapolated were shifted instead to Class B land application, leaving a total estimate of ~15,900 dt Class A EQ distribution. • As corroboration of these totals, IL EPA data for 2011 showed 173,040 dt going to agricultural land, 7,653 dt Class A biosolids going to general distribution (there has definitely been an increase in Class A distribution in recent years), and 7,656 dt going to land reclamation (including landfill final cover; Chicago confirms that there is less land reclamation now). Total beneficial use in 2011 was 188,349 dt. • The 28,000 dt shown here under long-term storage is not included in the end use and disposal totals; NBDP tries to report tonnages *used or disposed*, solids that went "out the gate."

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
Landfill (total)	77	124,877	20	56,565
Burial	data not requested for 2004	data not requested for 2004	20	56,565
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	0	0
Surface Disposal	0	0	5	5,887
Incineration	0	0	0	0
Cement kiln or industrial furnace	data not requested for 2004	data not requested for 2004	0	0
Deep well injection	data not requested for 2004	data not requested for 2004	0	0
Gasification	data not requested for 2004	data not requested for 2004	0	0
Pyrolysis	data not requested for 2004	data not requested for 2004	0	0
Disposal & Alternative Dispositions Subtotal	77	124,877	25	62,452
TOTAL	557	348,063	#VALUE!	305,074

ECHO data do not include all solids disposed in landfills. Therefore, the numbers here rely on IL EPA data for 2011, since 2018 data on landfilled solids are not compiled. For 2011, IL EPA reported 56,565 dt landfilled; that number is used here. • Surface disposal reported in ECHO for 2018 was 5,137 dt, which was extrapolated here to 5,887 dt. • IL EPA data for 2011 shows 3,903 dt to surface disposal and a total of 60,468 dt disposed of.

Biosolids Quality Summary

	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	
Class A EQ	10	1,879	235	83,555	
Other Class A	0	0	6	6,175	
Class B	454	354,484	250	143,002	
Other (no data, etc.)	0	0	18	19,587	
TOTAL	464	356,363	509	252,319	

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

Extrapolated from ECHO data using the same 115% extrapolation factor as used above.

Biosolids Treatment Practices

	Estimated Number of WWTPs or Separate Preparers Using...	Estimated Quantity of Biosolids Produced Using...	Estimated Number of WWTPs or Separate Preparers Using...	Estimated Quantity of Biosolids Produced Using...
Stabilization				
Aerobic Digestion (total)	probably 400	no data	probably 400	
Class A (ATAD/Other)	data not requested for 2004	data not requested for 2004		
Class B	data not requested for 2004	data not requested for 2004		
Anaerobic digestion (AD) (total)	approx. 45	no data	approx. 45	
Class A (e.g. thermophilic)	data not requested for 2004	data not requested for 2004		
Class B (mesophilic)	data not requested for 2004	data not requested for 2004		
WWTPs co-digesting (FOG, food, glycol, etc.)	data not requested for 2004	data not requested for 2004		N/A
Biogas used (heating, electricity, fuel, etc./scf/year)	data not requested for 2004	data not requested for 2004		N/A
Lime/Alkaline (total)	approx. 20	no data	approx. 20	
Class A lime/alkaline	data not requested for 2004	data not requested for 2004		
Class B lime/alkaline	data not requested for 2004	data not requested for 2004		
Composting	few to none	no data	few to none	
Thermal (e.g. heat drying, not incineration/gasification/pyroly)	0	no data	1	
Gasification	data not requested for 2004	data not requested for 2004	0	0
Pyrolysis	data not requested for 2004	data not requested for 2004	0	0
Hydrolysis (thermal, chemical, etc.)	data not requested for 2004	data not requested for 2004	0	N/A
Long-term (lagoons, reed beds, etc.)	49	no data	many, in 2011, 8 produced solids	N/A
Oxidation ditch / extended aeration	data not requested for 2004	data not requested for 2004	no data	N/A
Other stabilization technology	0	no data	no data	
Dewatering				
Belt Filter Press	many	no data	many	
Plate & Frame Press	0	no data	0	
Screw Press	0	no data	no data	
Centrifuge	1	no data	>1	
Vacuum Filter	0	no data	0	
Drying beds (open-air)	many	no data	many	
Solar drying (e.g. in greenhouse)	data not requested for 2004	data not requested for 2004	no data	
Other dewatering technology	0	no data	some long-term storage/drying	
Thickening				
Gravity thickener	data not requested for 2004	data not requested for 2004	no data	
Gravity belt thickener (GBT)	data not requested for 2004	data not requested for 2004	no data	
Centrifuge	data not requested for 2004	data not requested for 2004	no data	
Dissolved air flotation (DAF)	data not requested for 2004	data not requested for 2004	no data	
Other thickening technology	data not requested for 2004	data not requested for 2004	no data	
Other				
Biosolids sold in bags (explain at right what size bags)	data not requested for 2004	data not requested for 2004	no data	