

DASHBOARD

Tennessee State Biosolids Statistics

Data Quality & Methods	2018	explanations & sources
<p>Quality & Confidence in this state's data:</p> <p>Data sources & methods:</p> <p>State biosolids included in 2018 EPA ECHO data</p>	<p>Moderate</p> <p>Data for 50 WRRFs are from U. S. EPA ECHO database, with corroboration for 7 of them in NBDP survey, plus extrapolations for 6 more. More than 82% of TN wastewater flow is represented. Reviewed by a TN biosolids expert and a contact at the TN DEC.</p> <p>93% % in ECHO vs. the total presented here</p>	<p>ranking by survey team based on information provided in survey (options: High, Moderate, Low, None)</p> <p>https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual</p>
<p>Demographics & Wastewater</p> <p>State population:</p> <p>Total land area in state (acres):</p> <p>Population density (persons/square mile):</p> <p>Total number of WRRFs reported in state survey:</p> <p>total number of WRRFs permitted/reported elsewhere:</p> <p>number of WRRFs in EPA ECHO reports for 2018:</p> <p>Average population served per WRRF:</p> <p>Average wastewater flow statewide (MGD, NBDP):</p> <p>avg.wastewater flow statewide (MGD, Seiple):</p> <p>Number of WRRFs that treat >75% of state flow:</p> <p>% of population served by on-site (septic) systems:</p> <p>Biosolids used or disposed / person in 2018 (lbs):</p>	<p>6,770,010</p> <p>26,390,400</p> <p>164.2</p> <p>56</p> <p>256</p> <p>50</p> <p>18,512</p> <p>no data</p> <p>742</p> <p>30</p> <p>30%</p> <p>32</p>	<p>U.S. Census estimate for July 1, 2018 https://www.census.gov/newroom/press-kits/2018/pop-estimates-national-state.html</p> <p>calculated</p> <p>NBDP calculations & extrapolations Seiple et al., 2020; state experts, etc. https://echo.epa.gov/facilities/facility-search?mediaSelected=bioAnnual</p> <p>calculated</p> <p>no data available</p> <p>Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110852</p> <p>Seiple et al., 2020 https://doi.org/10.1016/j.jenvman.2020.110853</p> <p>NBDP estimate, based on 2004 estimate</p> <p>calculated</p>
<p>Biosolids Application</p> <p>Agricultural land cropland (acres):</p> <p>% of state area in cropland:</p> <p>Number of farms with that cropland:</p> <p>% cropland to which biosolids were applied:</p> <p>Application rate if all state biosolids were applied to cropland (dry U.S. tons/ac.):</p> <p>% cropland needed if all state biosolids were applied at typical rate (~3 dt/ac):</p>	<p>5,286,321</p> <p>20%</p> <p>51,216</p> <p>no data</p> <p>0.02</p> <p>0.7%</p>	<p>https://quickstats.nass.usda.gov/results/DC8AD84-6032-3776-469B-624988975872</p> <p>calculated</p> <p>https://quickstats.nass.usda.gov/results/F56563D1-C9CD-30EE-9774-2F91CC0640EC</p> <p>calculated</p> <p>calculated</p> <p>calculated</p>
<p>Nutrient Sources - Comparison</p> <p>Nitrogen (N) in all this state's biosolids (metric tonnes, 2018):</p> <p>N in this state's animal manures (metric tonnes):</p> <p>N in this state's purchased fertilizer (metric tonnes, 2011):</p> <p>If all state's biosolids applied, what % of state's applied N would come from biosolids?</p> <p>Phosphorus (P) in this state's biosolids (metric tonnes, 2018):</p>	<p>5,262</p> <p>124,787</p> <p>85,883</p> <p>2.4%</p> <p>2,193</p>	<p>calculated assuming avg. 4.8% biosolids N https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure</p> <p>https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased</p> <p>calculated</p> <p>calculated assuming avg. 2% biosolids P</p>

<p>P in this state's animal manures (metric tonnes):</p> <p>P in this state's purchased fertilizer (metric tonnes, 2011):</p> <p>If all state's biosolids applied, what % of state's applied P would come from biosolids?</p>	<p>38,148</p> <p>16,183</p> <p>3.9%</p>	<p>https://www.epa.gov/nutrient-policy-data/estimated-animal-agriculture-nitrogen-and-phosphorus-manure</p> <p>https://www.epa.gov/nutrient-policy-data/commercial-fertilizer-purchased</p> <p>calculated</p>
<p>State Regulatory Involvement</p> <p>Biosolids oversight agency / division:</p> <p>Permitting.... of biosolids programs:</p> <p>...of land application sites:</p> <p>FTEs: state biosolids regulatory program:</p> <p>Biosolids program FTEs per million population:</p> <p>Enforcement: Inspections of biosolids facilities & field sites in 2018:</p> <p>Formal violations issued:</p> <p>Amount of state regulations beyond Part 503:</p> <p>Amount of state regulation of nutrient management & phosphorus:</p> <p>Accessibility of biosolids data to public:</p> <p>State encouragement of biosolids recycling to soils:</p> <p>Voluntary additional protections by land appliers known & reported by state coordinator:</p>	<p>Dept. of Environment & Conservation</p> <p>General & individual permits for beneficial use Land applier must submit to TN DEC a Notice of Intent and a Land Application Plan for Class B land application. No requirements for Class A EQ.</p> <p>1</p> <p>0.15</p> <p>no data</p> <p>no data</p> <p>Low</p> <p>Low</p> <p>Low</p> <p>Moderate</p> <p>None</p>	<p>NBDP estimate calculated no data provided no data provided</p> <p>rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)</p>
<p>Trends</p> <p>New land application activity, 2018 - new permits & acreage, acres applied: acres applied in 2018:</p> <p>Local regulations & their impacts?: details...</p> <p>Legislative & state regulatory actions in 2018 & their impacts?: details...</p> <p>Biosolids beneficial use increasing... ..in 2018?:in 2020?:</p> <p>details...</p>	<p>None no data</p> <p>None</p> <p>None</p> <p>increasing some increasing some with looming reduced landfill capacity & demonstrated successes with solids treatments and beneficial uses, interest in beneficial use is growing some.</p>	<p>rankings by survey team based on information provided in survey (options: High, Moderate, Low, None)... With quotes of survey responses by state expert(s)</p> <p>NBDP estimate based on TN expert info NBDP estimate based on TN expert info</p>
<p>Changes in Biosolids Use & Disposal, 2004 - 2018</p> <p>Change* in solids reported used or disposed (in units used by state):</p> <p>Beneficial Use - percentage point increase or decrease (-):</p> <p>Landfill & surface disposal - % point increase or decrease (-):</p> <p>Incineration - percentage point increase or decrease (-):</p> <p>Class A - percentage point increase or decrease (-):</p> <p>Class B - percentage point increase or decrease (-):</p> <p>No class or not known - percentage point increase or decrease (-):</p>	<p>(109,037) dry metric tons</p> <p>48%</p> <p>-24%</p> <p>-24%</p> <p>17%</p> <p>37%</p> <p>-54%</p>	<p>*Change may be due to population increase/decrease, change in treatment at a large WWTP, and/or different systems of data tracking and reporting.</p> <p>calculated comparing these 2018 data to 2004 data compiled by the same survey team (NEBRA, 2007)</p>