NATIONAL BIOSOLIDS DATA PROJECT

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WYOMING

BIOSOLIDS MANAGEMENT 2018 - STATE SUMMARY

This summary, a dashboard of state statistics, & further data are at www.biosolidsdata.org

In Wyoming...

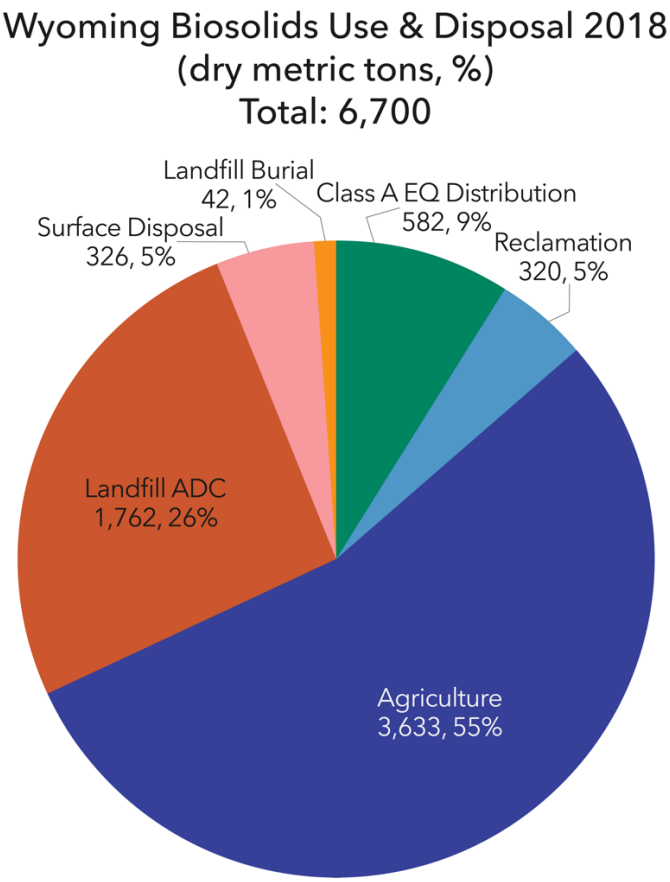
- *Biosolids are mostly applied as soil amendments on agricultural land; some larger cities have successful composting programs that distribute biosolids compost locally.*
- *Biosolids that are not land applied are mostly used as alternative daily cover (ADC) on landfills.*
- *Only 12 mechanical water resource recovery facilities (WRRFs) operate in the state. The vast majority of water resource recovery facilities (WRRFs) have sludge lagoons that are cleaned out only every 10-30 years.*

Biosolids Management in Wyoming

Biosolids are not regulated or tracked at the state level in Wyoming, but are regulated and enforced by U.S. EPA Region 8, with offices in Denver, CO. The National Biosolids Data Project (NBDP) relied on the U.S. EPA's ECHO database and online resources to procure information on biosolids management in Wyoming.

Wyoming is a sparsely populated state with lots of open land and few cities. NBDP acquired data on some of the largest water resource recovery facilities (WRRFs) in the state, but those data only account for ~55% of the state's total wastewater flow, based on flow estimates from Seiple et al. 2020. Many of the larger cities in Wyoming beneficially reuse their biosolids by land applying or marketing and distributing mostly Class A biosolids products. The majority of WRRFs in the state have lagoons in which solids may sit for 10-30 years without any need for cleanout, as is the case in Jackson (more on that below).

Seiple et al. 2020 identifies 96 WRRFs in Wyoming, most of which are lagoon systems. Only a dozen mechanical wastewater treatment plants operate in Wyoming - the other ~84 have lagoon systems. For 2018, no WY WRRFs with lagoons reported to U. S. EPA or the NBDP survey that they managed solids that year. WRRFs in Wyoming that manage solids regularly use a variety of practices. See below for more information on specific programs.



Agency/Department Oversight, Regulations, and Permitting

Biosolids in Wyoming are governed under the federal rules, 40 CFR Part 503 for land application and Part 258 for landfill disposal per DEQ Chapter 3, Section 2(e). U.S. EPA Region 8 administers the biosolids rule; the state has no additional regulations. The state biosolids coordinator is housed in the Department of Environmental Quality, Water Quality Division, but the WY DEQ does not monitor or enforce biosolids rules. WRRFs are permitted by WY DEQ, through a NPDES-like permit. WRRFs and biosolids management facilities must submit a copy of their federal permit to WY DEQ. Wastewater operators require certification through the state. In rare cases where EPA does not permit the land application or surface disposal of biosolids or septage "by issuance of an Authorization To Land Apply or Surface Dispose Sludge Under the National Pollution Discharge Elimination System," then WY DEQ may issue a state permit under DEQ Chapter 2, Section 2(e)(i-v). Specifics of DEQ biosolids management rules can be found in Chapter 11, Section 20.

Septage Management

As with biosolids, the federal septage rules (also 40 CFR Part 503 and Part 258 landfill rules) are administered by the U.S. EPA Region 8.

Table 1. Wyoming Septage Management

Quality of state septage data	None
Septage haulers based in state:	no data
In-state separate preparers (not WRRFs) taking septage:	0
WRRFs required to take septage?	No
WRRFs that accept septage:	likely about 10
Septage received at WRRFs in 2018 (gallons):	-
Other outside wastes accepted at WRRFs:	likely only septage & FOG
Is fats/oil/grease (FOG) a significant issue?	No
Is it regulated?	No
Is there a proactive program to collect FOG?	No
Can septage be land applied in state?	Yes
If yes, what treatment is required?	Must meet Part 503.
Most recent septage regulations update:	Septage is managed in accordance with U.S. EPA regulations.
Full-time equivalent (FTE) at state agency for septage:	0
Notes:	
NBDP estimates that WY residences produced about 3.5 million gallons of septage in 2018.	

Major WRRFs and Notable Projects

Cheyenne, Wyoming's largest city and capital, has two wastewater facilities, Crow Creek and Dry Creek, which treat a combined 10-12 MGD. Biosolids from these two facilities are anaerobically digested, dried in centrifuges, then go into drying beds for up to two years, until they reach ~75% solids. The biosolids, which reach Class A or Class B standards, are land applied or temporarily stored.

Casper's Wastewater Treatment Facility (WTF) treats sewage sludge through anaerobic digestion. In 2018, Casper reported producing Class B biosolids that were used for alternative daily cover (ADC) at the local landfill. According to public planning documents (reference below), Casper biosolids are dewatered in a centrifuge and mixed with wood chips for composting at the municipal landfill's Biosolids Composting and Storage Facility. Casper has a separate composting operation that accepts manure, yard waste, etc. Yard waste compost is sometimes mixed into the biosolids compost to improve its quality. All compost is sold to the

public for $20/cubic yd or available for free to customers who bring in compostable material (pound-for-pound exchange). The biosolids compost is also used as "final and intermediate landfill cover." Trees are grown in a greenhouse and nursery on site for use in landfill remediation/slope stabilization, wind blocks, and public parks.

Laramie co-composts biosolids with other green waste into a Class A EQ product available for sale and public distribution.

Gillette's biosolids are anaerobically digested and dried in a centrifuge or drying beds before being composted. Stonepile Soil Amendments (Biosolids) Compost is the final Class A product, which is available to the public at Gillette's Wastewater Treatment Compost Facility, along with compost from the city's separate yard waste compost program. Compost costs $20/cubic yd.

Rock Springs produces a Class B biosolids that is land applied.

Sheridan mixes the majority of it biosolids with wood chips and Construction & Demolition waste, creating a product used for landfill alternative daily cover. According to the Solid Waste Superintendent at Sheridan, this ADC product has increased landfill compaction by 40%. A smaller amount of Sheridan biosolids are composted with yard waste. This compost can be purchased by the public for $35.01/ton or exchanged pound-for-pound with raw compostable materials at the municipal landfill's compost facility.

Green River's wastewater treatment plant has lagoons that have not had solids removed in recent years, so the facility was not managing any solids in 2018 or as of 2021.

Evanston's biosolids go to a dedicated surface disposal site.

Riverton's WRRF dewaters biosolids in a centrifuge and then utilizes a "Long Term Treatment Method" to produce a Class A EQ biosolids product, which is then available for sale to the public at $10/cubic yd.

Jackson's municipal WRRF has lagoons that have never been cleaned out, but likely will need to be soon, given the town's recent rapid growth. Nearby, the communities of Teton Village and Alpine have small mechanical WRRFs. Teton Village's biosolids go to landfill ADC.

References

Information included in this summary mostly came from the sources listed below; additional information was gleaned from responses to NBDP's WWTP survey, U.S. EPA's ECHO database, and contacts at WY DEQ. This summary and NBDP's compiled data on

Wyoming biosolids were kindly reviewed by the State Biosolids Coordinator and District Engineers at the Wyoming Department of Environmental Quality.

WY DEQ Regulations:
http://wwcb.state.wy.us/PDF/RulesAndRegulations/DEQ%20Chapter%203.pdf

Cheyenne:
https://www.cheyennebopu.org/Your-Sewer/Biosolids

Jackson area:
https://www.jhnewsandguide.com/news/environmental/with-jackson-hole-s-sewage-a-treatment-tradeoff/article_61b8916c-c48e-5b6a-81ed-4a5027c44db0.html
https://buckrail.com/alpine-gets-new-sludge-treatment-system/
https://www.jacksonwy.gov/429/Wastewater-Department
https://nelsonengineering.net/teton-village-wastewater-treatment-plant/

Green River:
https://www.cityofgreenriver.org/145/Wastewater-Treatment-Plant

Sheridan:
https://www.sheridanwy.gov/cms/one.aspx?portalid=14896059&pageid=15565901
https://www.sheridanwy.gov/cms/one.aspx?portalId=14896059&pageId=15565073

Gillette:
https://www.gillettewy.gov/city-government/departments/utilities/wastewater/treatment-process
https://www.youtube.com/watch?v=1_Tmb6chJxE
https://www.gillettewy.gov/city-government/departments/public-works/sustainability/compost

Casper:
https://p1cdn4static.civiclive.com/UserFiles/Servers/Server_62983/Image/Government/Casper%20City%20Agendas%20and%20Minutes/Work%20Sessions/2020/July/07-14-20%20Work%20Session%20Packet%20(2).pdf

Seiple, Timothy (2020), "Data for: Municipal wastewater sludge as a renewable, cost-effective feedstock for transportation biofuels using hydrothermal liquefaction", Mendeley Data, V2, doi: 10.17632/wf64vzcg58.2