



GEORGIA

BIOSOLIDS MANAGEMENT 2018 – SUMMARY

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

In Georgia...

- *For the past decade or more, a large majority of Georgia biosolids have gone to landfill or incineration. Land application of Class B biosolids accounts for under 1/3 of the state's wastewater solids production.*
- *ERTH Products - a long-standing, successful composting program - is one of just a few Class A biosolids programs.*
- *In 2018, challenges with landfill disposal and subsequent restrictions exposed the state's reliance on this one outlet for most wastewater solids, and there has since been major disruption to biosolids management in Georgia, causing a shift to increased land application and creation of more Class A products, including at the Atlanta WRRFs.*
- *“Atlanta's biosolids management story exemplifies how quickly the landscape and economics of biosolids management can change. Utilities that can be flexible and adapt their biosolids management plans will be well prepared to navigate what circumstance throws at them...” (Knight et al., 2020).*

Biosolids Management in Georgia

Georgia is a state with varied geography: coastline, mountains, rivers, rural areas, suburbs, and small towns, and one huge metropolitan area: Atlanta. Biosolids that are beneficially reused in Georgia are land applied on agricultural soils in the state or in neighboring states (e.g. Alabama) or further processed and sold as fertilizers. Most of Georgia's biosolids are landfilled (about 60%) and have been for many years, since the state's sewage sludge incinerators (SSIs) began closing in the 2010s due to new U.S. EPA air emissions standards. In 2018, one incinerator remained in operation (and still operates as of 2021): a multiple hearth incinerator at the RM Clayton Water Reclamation Center northeast of Atlanta (more details below).

Landfills are undergoing changes in Georgia. 2018 saw a slope failure at Eagle Point Landfill, located north of Atlanta. Many of the region's water resource recovery facilities (WRRFs) sent their wastewater solids for disposal at Eagle Point, and the landfill handled a significant portion of Georgia's solids. Because of the slope failure, Eagle Point closed for two weeks. When it reopened, there were new restrictions: Eagle Point signed a voluntary agreement with the state to only accept 5% of high-moisture content waste (HMCW) – materials with >40% moisture, or <60% total solids – which drastically reduced its capacity to take in wastewater solids, almost all of which are <60% solids. Other

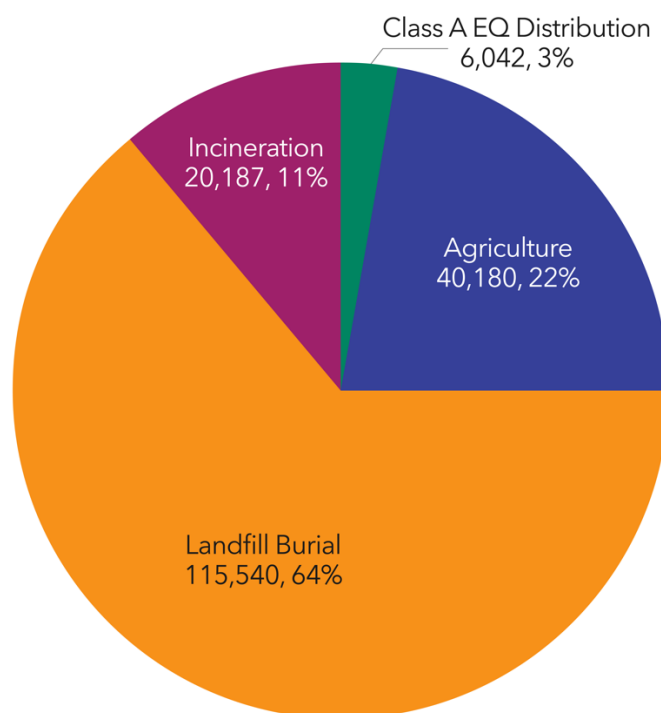
landfills in northern GA have had instability issues in the last decade, despite differing rules and procedures for managing HMCW. In 2019, a slope failed at Pine Bluff Landfill, not far from Eagle Point. Landfills across the state are rethinking how much high-moisture waste they accept. Some are refusing wastewater solids and biosolids; others are limiting their intake, or, like Eagle Point, only accepting material with higher solids content. This shift is causing landfill tipping fees to rise, sometimes by 200-300%. WRRFs are under pressure to explore alternatives for biosolids treatment, end use, or disposal.

The Georgia Association of Water Professionals (GAWP) quickly noticed the challenges that the Eagle Point slope failure caused for many WRRFs across the state. In 2019, GAWP conducted a statewide survey of WRRFs, hoping to understand what challenges facilities were facing and what alternatives they were pursuing. The responses to GAWP's survey point to the need for quick solutions for biosolids management - drying biosolids, composting, and land application for agriculture or silviculture are all gaining attention in Georgia.

As in other states, many smaller WRRFs in Georgia use aerobic digestion; they don't need to demonstrate if their biosolids are Class B if they're going to landfill, and so the aerobic digestion process is not strictly controlled and monitored. But some facilities land apply and must demonstrate Class B compliance. The smallest facilities tend to have sludge lagoons that only get cleaned out every now and then. These small facilities can often find a local place to land apply the solids from those rare cleanouts, to avoid landfill tipping fees. In the past, such one-time applications were not always reported. Technically, a site permitted by the Georgia Environmental Protection Division (GA EPD) is needed for land application. Such solids may not even be Class B, although they could likely test and meet Class B standards.

A handful of WRRFs in Georgia dry their biosolids. Dried biosolids can receive a fertilizer designation from the GA Department of Agriculture and be marketed and sold on the general market. Fertilizer registration is a simpler and cheaper process than Class B land application permitting through the GA EPD, but it requires a much drier Class A EQ biosolids product that is more costly and requires more technology (e.g. a dryer) to produce. But, as landfill prices go up, heat drying becomes a more cost-competitive option.

Georgia Biosolids Use & Disposal 2018 (dry US tons, %) Total: 181,900



Agency/Department Oversight

Biosolids in Georgia are overseen by the Environmental Protection Division (GA EPD). The GA EPD has seven districts and satellite offices across the state. All major and minor WRRFs must submit annual biosolids reports to their EPD district office. These reports include information on biosolids generated and where they went for use or disposal; these paper reports usually stay within the storage system at the district EPD office, meaning that there is no centralized repository of biosolids data at the Georgia EPD.

State Regulations and Permitting

For Georgia WRRFs generating biosolids, Sludge Management Plans are incorporated into either an NPDES or LAS (Land Application System) permit. Beyond Part 503, EPD requires additional biosolids management practices, including buffers and storage requirements.

Land sites where Class B biosolids are applied must be permitted by the EPD, and land appliers and/or landowners can be the holders of legal liability for biosolids end use. Land appliers must report test data related to soil quality. Nitrogen is the basis for Georgia's agronomic loading rate. There are no

state restrictions or controls on phosphorus applied in biosolids. EQ and other Class A products have labeling requirements and must be certified to be allowed for sale, marketing, and distribution.

Pressures on Biosolids and Land Application

The top two pressures on biosolids in Georgia as of 2018, as identified by a contact at the EPD, include...

- PUBLIC INVOLVEMENT – concerns of neighbors, environmental groups, and others
- COST – disposal options are least expensive (although landfill costs are now rising)

As noted above, changes in landfill management is putting pressure on Georgia biosolids generators. In 2021, the Georgia legislature was considering regulating landfill disposal of biosolids and other low-solids materials such as water treatment residuals – the only state (to NBDP’s knowledge) in the country moving to do so. New legislation would likely still allow for a landfill to accept biosolids, but would require a review of the landfill’s operations and design if more than 5% of “wet” ($\leq 40\%$ solids) materials are accepted. It is estimated that 95% of GA biosolids are less than 40% solids.

As of 2018-2021, beneficial use of biosolids in Georgia is remaining the same. But that will likely change soon. More facilities are shifting to land application, which is easier in neighboring Alabama. Some large facilities in Georgia are looking at biosolids dryers. As of 2019, Atlanta began a Class A lime stabilization program. Treating to Class A allows for more flexibility in how the biosolids are managed: they can be marketed and distributed as fertilizer, burned as an alternative fuel, or landfilled under the new requirements/regulations.

Septage Management

Septage can be land applied in Georgia if it meets Part 503 requirements. It is estimated that most septage in GA is hauled to WRRFs for treatment.

Georgia Septage Management

Quality of state septage data	None
Septage haulers based in state:	no data
In-state separate preparers (not WRRFs) taking septage:	some
WRRFs required to take septage?	no
WRRFs that accept septage:	no data
Septage received at WRRFs in 2018 (gallons):	no data
Other outside wastes accepted at WRRFs:	no data
Is fats/oil/grease (FOG) a significant issue?	Don't know
Is it regulated?	yes

How?	no data
Is there a proactive program to collect FOG?	yes
Can septage be land applied in state?	yes
If yes, what treatment is required?	Must meet EPA Part 503. And the GA EPD issued a general permit on June 30, 2014 that regulates the land application of domestic septage from Tier 1 operations, which are defined as “land disposal sites that receive and land apply septic tank waste from a single permitted septic tank pumping and hauling business.” Refer to Georgia Department of Natural Resources Rules, Chapter 391-3-6-.23, “Land Disposal of Septage” for the definition of domestic septage and all requirements for the land disposal of septage. The EPD document entitled “Guidelines for Land Application of Domestic Septage at Agronomic Rates” (also referred to as the “Septage Guidelines”) provides specific operational guidance for septage land application sites and cross references the related elements of a Septage Management Plan.
Most recent septage regulations update:	February 2014
Full-time equivalent (FTE) at state agency for septage:	Overseeing septage disposal is a minor part of the jobs of regional district EPD staff.
Notes:	
NBDP estimates GA produces 38 million gallons of septage annually, assuming 20% of the 3.853 million households rely on septic systems and 5% of those are pumped out annually.	

Major WRRFs, Separate Preparers, and Notable Projects

- The City Council of Atlanta oversees three major wastewater reclamation centers (WRCs): RM Clayton, Utoy Creek, and South River. RM Clayton is by far the largest wastewater treatment plant in Georgia, treating over 87 MGD in 2018. It houses the only remaining operational sewage sludge incinerator in Georgia, a multiple hearth incinerator that was quickly upgraded to meet new air emissions standards released by U.S. EPA in 2011.

RM Clayton, Utoy Creek, and South River (as well as other WRRFs serving the Atlanta area) all used landfill disposal as an option for their wastewater solids in 2018. After that year’s slope failure at Eagle Point landfill and restrictions on solids content of accepted materials, these WRCs had to find alternative options for solids management. In 2019, South River had a significant build-up and installed a temporary holding tank. By late 2019, with the help of a contract with Denali Water, both South River and Utoy Creek were using temporary lime stabilization systems to produce Class A biosolids that were land applied and popular with local

farmers (GA soils are low in pH). At RM Clayton, emergency procurement of landfill space was required to deal with their supply of solids. The City Council's Capital Improvement Plan now includes upgrades to all three WRRFs to improve biosolids management and reduce the amount of solids that need to be trucked and landfilled and improve resource recovery. For example, nutrient recovery increased at RM Clayton with the installation of a reactor to produce Ostara phosphorus fertilizer.

Upgrades (2018-2021) to RM Clayton also move toward decommissioning its sewage sludge incinerator. As of 2021, construction is underway on a new biosolids reuse system, which will include anaerobic digestion (AD) and a combined heat and power (CHP) generation unit to capture and utilize biogas from AD, and a drying system. Atlanta contracted with US Filter for the design, construction, and operation of the new biosolids facility. US Filter will also develop a similar facility at Utoy Creek and upgrade other Atlanta metro-area WRCs. Upon completion of the new RM Clayton biosolids facility, Atlanta plans to produce Class A EQ biosolids pellets, the majority of which will be distributed for public use or land applied in bulk as a fertilizer. The remainder will go to landfill, allowing RM Clayton's incinerator to be decommissioned.

As noted in *Water Environment and Technology*, "Atlanta's biosolids management story exemplifies how quickly the landscape and economics of biosolids management can change. Utilities that can be flexible and adapt their biosolids management plans will be well prepared to navigate what circumstance throws at them..." (Knight et al., 2020).

- Cobb County is home to four water reclamation facilities (WRFs), all serving the Atlanta metro area and treating, approximately, a combined 70 MGD. RL Sutton is the largest of the four. In 2008, two fluidized bed SSIs were installed at Sutton WRF, but by 2018, the facility was mostly relying on landfills for biosolids disposal, due to air quality emissions standards.
- EARTH Products near Plains, GA, recycles biosolids through composting, mixing them with peanut hulls or other bulking agents. The result is "EARTH Food[®]," an EQ product used in soil blends, landscaping, horticulture, and other soil management projects.
- Macon Water Authority (MWA) operates two wastewater treatment facilities: Rocky Creek (24 MGD) and Lower Poplar (20 MGD capacity). Dewatered biosolids from the two plants are mixed together and treated with aerobic digestion to Class B standards before being land applied on farm fields in surrounding counties. An unusual non-profit arm of MWA, "Macon Soils," manages the 23,000 wet tons of Class B biosolids land applied each year, along with the land application of 1000 wet tons per year of water treatment residuals. According to Macon Soils' website: "Recycling 23,000 tons of biosolids – which fill about 1,600 large dump trucks – saves money for landowners, the MWA, and the many customers of the MWA. To place the biosolids in a landfill – a common practice used in the past – the cost to the MWA would be from \$40 –

\$60 per ton. The cost to recycle the biosolids to spread on local farms is approximately \$24 per ton – a substantial savings, not to mention the additional environmental and agricultural benefits from recycling biosolids, as by-products of conventional wastewater treatment processes.”

- Laurens County implemented biosolids composting at their landfill site in 2008 and has since expanded the composting operation to divert more organic waste from the landfill. The compost is used as fertilizer on landfill slopes and other grounds.
- Clayton County Water Authority’s W.B. Casey WRRF in Jonesboro houses a biosolids pelletizing facility. Biosolids are dewatered before entering a rotary kiln dryer. The final product is Class A EQ, 95% solids. These pellets are registered with the Georgia Department of Agriculture as Agri-Plus 650TM fertilizer. EARTH Products purchases and distributes the pellets.
- Dalton Utilities (based in Dalton, the “Carpet Capital of the World”) operates four wastewater treatment facilities, and manages a 9,600 acre Land Application System – a forested area where effluent from the WRRFs is used for spray irrigation. It’s the largest forested LAS in Georgia, and one of the largest in the country. Though public access is somewhat restricted, the LAS is a destination for hunters and bird watchers. Dalton’s LAS also houses a combined cycle power plant, which uses treated wastewater for cooling, and a large solar array. Wastewater solids from Dalton’s WRRFs are anaerobically digested and dewatered. In 2018, all of the Utility’s biosolids went to landfill.

References

The information in this summary report was provided by contacts at the Georgia Association of Water Professionals, Black & Veatch, and the Georgia Environmental Protection Division. Additional information was obtained from:

2KB Energy Services:

<https://www.2kbenerygservices.com/case-study/rm-clayton-wrc/>

Atlanta City Council:

<https://citycouncil.atlantaga.gov/Home/ShowDocument?id=1858>

Atlanta Watershed

<https://www.atlantawatershed.org/newrelease-mar-2020-0006-4/>

Cobb County:

<https://s3.us-west-2.amazonaws.com/cobbcounty.org.if-us-west-2/prod/2019-12/Sutton-Tour-Guide.pdf>

Dalton Utilities:

<https://www.dutil.com/wastewater-treatment/>

<https://www.dutil.com/wastewater-facilities/>

ERTH Products:

<https://erthproducts.com/what-is-erth-food/>

<https://erthproducts.com/about-us/#whatwedo>

Georgia Public Broadcasting:

<https://www.gpb.org/news/2020/09/09/how-small-georgia-town-became-ground-zero-for-landfill-collapse>

Industrial Furnace Company:

<https://www.industrialfurnace.com/blog/2014/03/04/renewing-multiple-hearth-furnaces-the-atlanta-experience>

Knight, Greg; Steve Simpson; and Rob Bocarro, 2020. Best land plans... *Water Environment & Technology*, March 2020. Water Env. Federation.

Macon Water Authority:

<http://www.maconwater.org/water-reclamation-facilities>

<http://www.maconwater.org/macon-soils>

Midwest Bio-Systems:

<http://blog.midwestbiosystems.com/blog/bid/287169/Landfill-Turns-to-Composting-Biosolids-Benefits-the-Community>

Treatment Plant Operator Magazine:

<https://www.tpomag.com/editorial/2017/04/forested-land-application-system-draws-170-species-of-birds>

Water & Wastes Digest:

<https://www.wwdmag.com/city-atlanta-and-usfilter-partner-class-biosolids-program>

<https://www.wwdmag.com/anaerobic-digestion-equipment/anaerobic-additions>

WaterWorld:

<https://www.waterworld.com/international/wastewater/article/16201424/partnership-forms-biosolids-program>