# Impact of proposed state legislation banning land application of biosolids due to PFAS

Presented to Tulsa City Council Public Works Committee

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### What are PFAS?

- PFAS, or per- and polyfluoroalkyl substances, are human made synthetic chemicals that are used for properties of water, grease, stain and heat resistance. PFAS are also known as "forever chemicals" because they do not easily break down into their natural carbon and fluorine components.
- Application of PFAS examples include non-stick cookware, water and stain resistant clothing and carpet, food packaging, fire-fighting foam, makeup, sunscreen, microwaveable popcorn, etc.

# What are biosolids?



- Treated wastewater is separated into a liquid and semi-solid, nutrient rich sewage sludge, or biosolids
- Three options for use or disposal of biosolids: land application, landfilling or incineration
- 7,100,000 dry tons at 16,000 treatment plants annually

# What does Tulsa do with biosolids?

- EPA regulation "Standards for the Use or Disposal of Sewage Sludge" (40 C.F.R. Part 503) allows land application of biosolids as a soil conditioner or fertilizer
- Tulsa produces Class B biosolids with pathogen reduction of 99% (Class A inactivates pathogens and can be distributed commercially)
- We meet Part 503 regulations

#### CITY OF TULSA BIOSOLIDS PROGRAM

The City of Tulsa's Water & Sewer Department staff is responsible for managing the wastewater that is generated by residential, commercial and industrial customers. Every day, our team makes sure that wastewater — on average 55 million gallons each day — is processed, treated and safe to discharge into local streams and rivers.

Wastewater is produced whenever people use water to flush their toilets or take showers, run dishwashers and washing machines or use garbage disposals. This wastewater contains solids that undergo treatment processes to first remove them from the wastewater and then to make them safe for disposal.

The by-products removed from the wastewater during treatment are further processed into a product called "biosolids." These biosolids contain nutrients and can be used by ranchers as a beneficial soil amendment to enhance the fertility of soils. Applying biosolids on agricultural land is a safe, cost-effective and an environmentally responsible way to recycle wastewater by-products and put them to beneficial use.



#### How are biosolids made?

Biosolids are produced at the City of Tulsa's Northside and Southside wastewater treatment plants.

 First the solids are separated from the water being treated. These solids then undergo a number of processes to

#### What happens to the biosolids that the City of Tulsa produces?

Tulsa produces approximately 20 million pounds of biosolids each year. State regulations require that this material be beneficially reused or disposed of in a landfill. Tulsa chooses beneficial reuse because it is cost effective and reduces the burden placed on our landfills. This lowers the cost for our customers and provides a benefit to local ranchers.

#### How do biosolids benefit ranchers?

Biosolids are used by local ranchers to improve the soil quality of their pastures.

- The landowners that we work with have told us that using biosolids results in improvements in pasture quality and rate of growth.
- Using biosolids also lowers production costs for ranchers by reducing the need to buy more expensive chemical fertilizers.

#### Are biosolids safe for humans and pets?

Research and experience have shown biosolids are safe for people, animals and the environment when properly treated and applied onto land.

### **Treatment plants and biosolids**

Wastewater Treatment Plant	Permit Limits (MGD)	Effluent Average (MGD)	Annual dry tons of biosolids	Biosolids process
Southside	42.0	19.8	3,377	Dewatering to 15% solids with drying bed storage
Haikey Creek (with BA)	16.0	12.1	-	Truck transport untreated sludge to Southside for treatment. Project under design for composting with \$9.6M USDA grant.
Northside	42.6	17.7	4,243	Sludge digested to 1.5% solids, to lagoons, then decant to 7.0% solids.
Lower Bird Creek	4.0	0.9	-	Sludge is pumped through line to Northside for treatment.

# **Biosolids data**



- Each field permitted through ODEQ
- 167 fields over 13,000 acres
- Counties: Creek, Osage, Okmulgee, Wagoner, Rogers, Tulsa
- Great response from landowners and waiting line for biosolids
- Costs Tulsa \$25/ton

### Senate Bill 3

- September 1, 2025: full cessation plan for land application of biosolids due to ODEQ
- September 1, 2025: 25% reduction in biosolids land applied
- September 1, 2026: 50% reduction in biosolids land applied
- July 1, 2027: total ban on biosolids land applied. No new ODEQ permits, renewals left to ODEQ decision.
- "Biosolids material" means sewage sludge containing any PFAS

# Impact if senate bill passes

Phases	Operations	Capital
9/1/2025 plan submittal	Submit plan with details as follows:	Need ODEQ to clarify if compost is acceptable or still considered a biosolid
9/1/2025: 25% reduction	56% Southside biosolids to landfill at cost of \$1.5M/yr	Northside dewatering design Haikey Creek still trucking sludge Possible Haikey Creek redesign
9/1/2026: 50% reduction	100% Southside, 10% Northside biosolids to landfill at cost of \$3.3M/yr	Northside dewatering construction (\$50M) Possible Haikey Creek dewatering construction (\$50M)
7/1/2027: full ban	100% of Southside, Northside biosolids to landfill at cost of \$10M/yr	Continue construction projects
Future	Energy costs for dewatering and drying expected to keep costs high even if landfill volume decreases	Investigate thermal drying as alternative to further reduce landfill and trucking costs

# **Considerations of legislation**

- City of Tulsa agrees that wastewater plants are passive receivers of microplastics, pharmaceuticals and PFAS
- Accept residential, commercial and industrial (some pretreated) waste, septage and landfill leachate that we treat for the community
- National land application is 60% while state is 80%
- Mixed messages about landfill capacity; reported decrease in landfill capacity by 25% if all biosolids taken to landfills
- It is impractical to meet the bill timelines due to design and construction of large capital projects

# Across the nation

#### Fear based strategy:

 Maine (2022) and Connecticut (2024) have total biosolids

#### Water based strategy:

 California focused on surface and drinking water

### Scientific based strategy:

- Michigan, Wisconsin and New York have some restrictions
- Michigan strategy supported by EPA

#### Michigan

- Less than 20 micrograms per kilogram (1 ppb), no land application restrictions
- 20 ppb to 99 ppb is reduced land application and additional testing
- 100 ppb or greater requires disposal of biosolids

#### USGS

 Recent study shows no agronomic uptake into corn

# Summary

#### Proposed legislation:

- Impacts current composting project at Haikey Creek and \$9.6M grant
- Could add over \$100M in capital sewer improvements
- Could add \$10M annually in operating costs for landfill disposal
- Could negatively impact septic tank owners and cost to service tanks

#### Recommendations

- More testing of biosolids and acreage is needed
- Use a science-based approach to PFAS in biosolids like Michigan
- Focus on the PFAS dischargers and do not penalize all citizens
- Provide a more realistic timeframe for capital improvements
- Please share this with your legislators

# THANK YOU

