General Biosolids Talking Points for Public Wastewater Utilities

What are biosolids?
Biosolids are a byproduct of the wastewater treatment process. They typically are semi-liquid and are very rich in nutrients. Provided they meet federal and state requirements, they are very valuable in agriculture. Wastewater treatment plants in the United States generate nearly 7.2 million dry metric tons of biosolids every year.

What do you do with them?
There are three main management methods for biosolids. Most biosolids in the United States are spread on farms as a natural fertilizer. This is called land application. Biosolids can also be disposed of in landfills or they can be incinerated. All of these options have undergone decades of scientific study and are governed by a robust set of federal and state regulations to ensure the safety and sustainability of each method.

What do other cities/towns do with their biosolids?
Nearly every community in America disposes of their biosolids in one of three ways: land application, incineration, and/or landfills.

How does land application of biosolids work?
The majority of biosolids generated across the country are applied on farmland as fertilizer. EPA and many states regulate biosolids land application, and past studies have shown that land application of biosolids is safe for the environment. Land application offers multiple benefits, including recycling nutrients to improve soil health and vegetative growth, restoring vitality to degraded lands, sequestering carbon, and enhancing the capacity of soil to absorb and hold water.

Biosolids land application also reduces reliance on manufactured chemical fertilizers and pesticides, which ultimately reduces the amount of hazardous constituents found in chemical fertilizers and pesticides from entering and impacting waterways. And in addition to their multiple environmental benefits, biosolids can provide a more affordable option for farmers compared to chemical fertilizer.

What about the non-agriculture options?
Landfills and incineration are options for some communities, but they present their own challenges. Landfill capacity is limited – landfills can be hard to get permitted and built and often fill up quickly. Landfilling biosolids means that the valuable nutrients they contain are wasted. Incinerators can be difficult to permit, construct and maintain.

What do farmers think of biosolids?
Many farmers depend on biosolids and applaud their effectiveness. Biosolids are frequently used instead of synthetic fertilizer and can often be more cost-effective. They're

typically used in large farming operations that grow wheat or barley and to restore vitality to degraded lands. In addition, biosolids help sequester carbon and improve the capacity of soil to absorb and hold water.

Are they dangerous?
Multiple studies have consistently shown that there are no serious health risks to the general public associated with biosolids. In fact, they are approved and endorsed for use in agriculture by multiple federal agencies and many states. Across the country, biosolids have undergone years of rigorous scientific study.

How can we know they are safe? I am being asked by my Board, the public, the press, and/or farmers if recent news about the presence of PFAS in biosolids means that my utility's biosolids are not safe for land application. What do I say?
Decades of study at the federal and state levels have found land application to be safe, when done in accordance with established regulations.[1] The Environmental Protection Agency (EPA), the U.S. Department of Agriculture (USDA), and the Food and Drug Administration (FDA) all support biosolids land application. Nearly every U.S. state and Canadian province regulates and allows biosolids land application and biosolids have been widely used on farms and other lands across North America for decades.

Many major universities have studied the use of biosolids on soils and support the safety of this management practice, finding little risk when used according to regulations.[2]

EPA has strictly regulated biosolids for decades and continues to support all three management options. The Agency's regulations guide how biosolids are processed, handled, and where and how they are land-applied.

What about EPA's recent risk assessment of PFOA and PFOS in biosolids? I am getting questions about it – what do I say?
EPA recently released a Draft Risk Assessment of the risk of PFOA and PFOS – the two most common PFAS chemicals – in biosolids via land application, but it has not proposed any changes to its current biosolids regulations as a result. EPA has also not proposed any regulation of PFOA or PFOS in biosolids.

The Draft Risk Assessment found that the presence of PFOA and PFOS, even at relatively low concentrations, may adversely impact human health for a very narrow and specific segment of the population – a hypothetical farm family – that EPA considers most likely to be exposed to PFOA or PFOS from the land application of biosolids or through direct

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[1] The U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture published a report in June 2020 (Research Committee W4170) that contains an excellent bibliography with many of the studies completed over the years on land application of biosolids. The report was developed to rebut claims from a U.S. EPA Office of Inspector General Report raising questions about the biosolids program.
[2] See Footnote 1.

consumption of products from land where biosolids were used as fertilizer. However, as outlined further below, EPA used conservative, hypothetical assumptions in its model.

Importantly, the Draft Risk Assessment did not identify any risk from PFOA and PFOS in biosolids to the general public.[3] The draft risk assessment also did not find any direct impact or risk from PFOA and PFOS in biosolids to the general food supply.[4]

It is critical to note that the risk levels identified in the Draft Risk Assessment cannot and should not be used as placeholder regulatory standards for PFOA and PFOS while EPA determines whether to move forward with developing new regulations. The Draft Risk Assessment itself is not a regulation, establishes no standards and does not create any regulatory obligations.

The risk assessment uses conservative assumptions, evaluating a hypothetical farm family that simulates possible exposure to PFOA and PFOS. The assessment assumes that the family, including adults and children, live on a farm that uses municipal biosolids as its fertilizer. The assessment further assumes that, for ten years, all of the family's food comes only from food grown and produced on the farm and that they only drink water from a well on the farm.

These assumptions are conservative and do not reflect real world conditions. In fact, the Agency's own Science Advisory Board (SAB) took issue with the conservative nature of EPA's approach when it reviewed the framework for the risk assessment, noting that the assumptions used by EPA are "well outside the norm of present-day family farms." The SAB also noted that "the vast majority of biosolids applications are made to lands that are not used for producing food directly consumed by humans but rather to lands used for producing animal feed, fiber and/or fuel."[5]

EPA will now evaluate whether or not the potential risks posed by PFOA and PFOS in biosolids warrant additional biosolids regulation. If so, the Agency will work to develop appropriate regulations. That work will likely take several years to complete. It is essential that any new regulations on PFAS in biosolids be informed by the final risk assessment to ensure they are effective and based on sound science.

Why are some people saying biosolids are hazardous?

EPA recently regulated PFAS compounds in drinking water, which has generated more

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[3] https://www.epa.gov/system/files/documents/2025-01/fact-sheet-draft-sewage-sludge-risk-assessment-pfoa-pfos.pdf

[4] https://www.epa.gov/newsreleases/epa-releases-draft-risk-assessment-advance-scientific-understanding-pfoa-and-pfos

[5] SAB Review of EPA's Standardized Framework for Sewage Sludge Chemical Risk Assessment (Oct. 12, 2023)

attention to concerns over potential sources of contamination. Concerns about PFAS have also grown following several high-profile examples of acute contamination to water and land from industrial sources. PFAS are a group of synthetic chemicals that have been used in consumer products since the 1950s and are highly persistent in the environment. Because PFAS can be found nearly everywhere, including in biosolids, there have been some media reports that have jumped to the conclusion that their presence is evidence of a threat. These concerns stem from misunderstandings of the research, which has not demonstrated significant risks to the average person from regulated biosolids.

What about EPA's Maximum Contaminant Levels (MCLs) for six PFAS in drinking water, or EPA's designation of PFOA and PFOS as hazardous substances? How do these actions impact biosolids?

EPA's MCLs for six PFAS compounds in drinking water are based on the potential impact of those compounds on humans over a *lifetime* of consuming the chemicals *through drinking water*. There is no way to apply MCLs when evaluating PFAS risk in biosolids nor the levels of PFAS in biosolids. People do not drink biosolids and any comparison between the MCLs and quantities of PFAS in biosolids is inappropriate and not scientifically valid.

Similarly, EPA's classification of PFOA and PFOS as hazardous substances under the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) does not fundamentally change the current regulatory environment governing biosolids. EPA has been clear in its communications about the classification that it does not intend to impact the operations of public clean water agencies.[6] Additionally, it is highly unlikely that wastewater treatment plants will release enough PFOA or PFOS (one pound or more over a 24-hour period) to trigger CERCLA's reporting requirements.

What is next in terms of potential federal action on PFAS for biosolids?

The next step is for EPA to review public comment on the Draft Risk Assessment and determine if it will finalize the assessment. If EPA finalizes the assessment, it must then determine if additional biosolids regulations are warranted. If EPA determines further regulation is warranted, the Agency will need to begin an elaborate rulemaking process that would likely occur over the next several years.

PFAS is not the first chemical class to raise biosolids concerns. EPA is required to regularly assess biosolids pollutant trends and is mandated by law to identify new pollutants present in biosolids. EPA studies pollutants to understand their fate and transport and potential risk to public health and the environment. If risk is found from biosolids, EPA begins a process to regulate and set standards. This science-driven process will be used to

[6] EPA noted in its press release announcing the rule that it is "committed to doing further outreach and engagement to hear from impacted communities, wastewater utilities, businesses, farmers and other parties during the consideration of the proposed rule."

determine actions on PFAS; and in doing so, will improve confidence related to biosolids safety.

Are there any state restrictions?

States have taken a variety of approaches to regulating PFAS and biosolids. Some, like Michigan and Maryland, have adopted a monitoring approach that facilitates continued land application of biosolids in collaboration with local utilities. Through monitoring, local utilities confirm that PFAS levels in biosolids stay below state-determined safety thresholds. In contrast, Maine moved hastily towards a total ban on biosolids land application which has caused significant unintended challenges for both local wastewater utilities and farmers who used to rely on biosolids in the state. As with the federal government, it is critical that states do not create new regulations impacting biosolids without first considering all relevant scientific information and actual risk to the average citizen, while also considering potential environmental and economic consequences.

Who would pay for increased PFAS regulations on biosolids?

Right now, local communities would have to shoulder any new costs associated with new regulations by themselves. Small and medium-sized communities would likely face the biggest challenge affording new regulations. Any health risks associated with PFAS should be the responsibility of the polluters that created the problem, and they should absorb the cost. This principle would be undercut if new and unfunded regulations would require the local community to remove PFAS and/or absorb that cost.

Utilities are partners in reducing PFAS

Utilities do not manufacture or create PFAS. Clean water agencies exist to protect public health and the environment. Through the federal Clean Water Act (CWA) pretreatment program, utilities can work with industries in their service area to limit pollutants being discharged into their wastewater systems. This may include using the pretreatment program to limit industrial discharges of PFAS to the sewer system.

However, pretreatment controls can only address known industrial or commercial sources. Clean water utilities do not have authority to control or reduce sources of PFAS from homes and many businesses. And because PFAS are everywhere in the environment and found in virtually every home and residential waste stream (from items like kitchen cookware, clothes, cosmetic products, and pharmaceuticals, just to name a few), industrial controls alone cannot eliminate the PFAS entering our water systems. This may put utilities in an impossible situation if extremely low levels, even below the levels of detection, are set by EPA or states as actionable levels.

Manufacturers should have ultimate responsibility and accountability, and polluters should pay

Actions to address PFAS, including changes to biosolids management, can be extremely costly for communities. This is due to the pervasive presence of PFAS after its decades of commercial use, the technical challenges of treating chemicals *designed* for indestructability, and the extremely low levels (parts per trillion) being found to potentially pose health risks in drinking water. Manufacturers of these chemicals should be responsible for any needed remediation and the ultimate transition away from PFAS use. Public water and wastewater utilities and their customers should not bear the potentially staggering costs of cleanup.

Controlling PFAS will require producers and distributors of these chemicals to reduce or eliminate their continued use in everyday products and industrial processes

Reducing or eliminating PFAS in clean water systems while the pollutants are still being widely used in commerce is a losing battle and an inefficient use of resources. And by the time PFAS reach a wastewater treatment plant, people have already been exposed to these chemicals. Public clean water utilities support source reduction and pollution prevention for PFAS, just as they have with other chemicals in the past.

Controlling and reducing the prevalence of PFAS must be addressed through federal laws and regulations that prevent their manufacture and use in commerce and/or their release to the environment. Absent coordinated, comprehensive action to substantially curb the manufacture, use, and disposal of PFAS, states and communities will still have problems with PFAS regardless of steps taken to control biosolids.

FOR UTILITIES CURRENTLY SAMPLING OR DOING SOURCE IDENTIFICATION FOR PFAS

- Clean water utilities are committed to better understanding how PFAS may be entering their wastewater treatment systems

In the absence of EPA standards, many utilities and some states have begun proactively studying and assessing PFAS that enters wastewater streams, that leaves in effluent or biosolids, and that is present throughout the watershed. In some cases, the data and information point to concentrated sources of PFAS, such as industrial users, that can be targeted for source reductions. At the same time, the data show the ubiquity of PFAS across the environment at low levels due to everyday domestic use of the chemicals, underscoring the importance of new federal and/or state controls on how and when these chemicals are used.