



A PRACTICAL GUIDE TO BIOSOLIDS MANAGEMENT IN CALIFORNIA

Avoiding an Affordability Crisis

Decades Supporting Farmers and a Sustainable Future

Biosolids are nutrient-rich material produced during wastewater treatment. When returned to the soil, this valuable resource improves soil health, retains water, and recycles nutrients.

California generates around 3.5 million wet tons of biosolids annually, enough to fill 160,070 tractor trailers. For decades, the state has partnered with farmers and landowners to recycle biosolids as a sustainable alternative to commercial fertilizers.

PFAS in Everyday Products and Biosolids

PFAS chemicals - including PFOA and PFOS - were used widely in manufacturing of products such as cosmetics, food packaging, pesticides, dental floss, and clothing. These substances persist in the environment and accumulate in our bodies. As a result, PFAS are measurable in wastewater and biosolids, though at levels much lower than many consumer products.

If the goal of a biosolids land application ban would be to reduce PFAS in the environment, forcing biosolids to landfills and incineration may not achieve that goal. According to the EPA, studies estimate that as much as 15% of mobile PFAS entering a landfill are emitted via leachate and landfill gas, while most landfills lack PFAS treatment. Exhaust from incineration may also contain PFAS that is not destroyed within the process.

Consequences of a Ban or Severe Restrictions on Land Application

There are limited options for managing biosolids: (1) land application, (2) landfilling, and (3) incineration (burning). Land application returns nutrients to the soil via well-regulated beneficial use practices. Potential future restrictions on land application could result in significant unintended consequences. For example, Maine and Florida have documented that the biosolids management costs increased by 175% to 300% following the loss of land application outlets.

Universal bans and severe restrictions on land application, without consideration for PFAS concentration or health risks, force local utilities to rely on costly and less sustainable disposal options.

Landfills are not a Long-Term Solution

A ban on land application in California would leave roughly 2.5 million wet tons of biosolids currently land applied in California and Arizona to be trucked to California landfills or out-of-state. This volume exceeds the state's estimated additional landfill capacity for 'wet' waste by 137%. Biosolids would be wholly forced out of state, where capacity is similarly limited and costs are high. Furthermore, sending more organic material like biosolids to landfills conflicts with California's SB 1383 goal to divert organics from landfills to reduce methane emissions in support of statewide climate objectives.



California recycles approximately **2.53 million wet tons of biosolids** annually, benefiting farmers and the environment while avoiding greenhouse gas emissions equivalent to driving **86,770 cars**.

According to US EPA's Enforcement and Compliance History Online (ECHO) Database



A ban on land application of biosolids would **increase greenhouse gas emissions by an estimated 174%**, which conflicts with California's SB 1383 goal of reducing organics disposal by 75% by 2025 (organics include biosolids)—increasing methane-related climate impacts.

According to CalRecycle SB 1383 Short-Lived Climate Pollutant Reduction Strategy and Brown and Caldwell/Carollo's 2026 California Biosolids Capacity Analysis Study

SB 1383 would have to be revised by legislators to allow biosolids landfilling, and landfill operators would need to accept this material which they are increasingly unwilling or unable to do, so this is not a realistic option.

Incineration Capacity Constraints

California currently has only one operational biosolids incineration facility, which is 45 years old. The state's stringent air-quality standards, siting constraints, and public opposition makes the approval and construction of additional biosolids incineration capacity highly unlikely in the foreseeable future.

Restrictions Risk Affordability for Ratepayers and Farmers

A ban or severe restriction on land application of biosolids would further strain utilities struggling to maintain affordable services for their customers. According to a study conducted by Policy Navigation Group on behalf of Association of Metropolitan Water Agencies, water utilities and ratepayers across the country are already facing an estimated \$6.4 billion in compliance costs to meet emerging PFAS regulations. A ban on biosolids land application would dramatically add to these costs, further burdening ratepayers. Additionally, a ban would drive up costs for the agricultural community by removing access to a reliable, nutrient-rich soil amendment and requiring farmers to purchase costly carbon-intensive synthetic fertilizers.

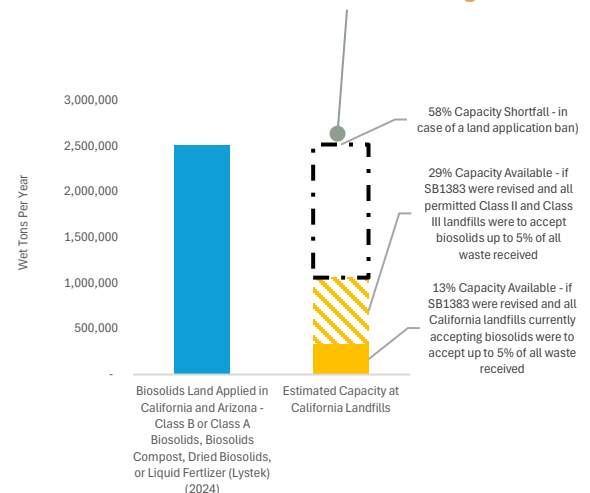
California's reliance on Arizona for biosolids management further amplifies the risks associated with future land application restrictions. Approximately 15% of California's biosolids are already being managed in the state of Arizona. Any disruptive legislative action on land application in California could trigger more reliance on out-of-state options, which, in turn, could result in retaliatory legislative actions in those states and long-term ratepayer impacts. In fact, recent language of Arizona House Bill 2640 could limit land application of biosolids or biosolids-based products by December 2027. Should this or other similar bills pass, it would force even more California biosolids back into the state's already limited landfill capacity.

A Responsible Path Forward

California can continue to protect public health and the environment without sacrificing sustainability or affordability. Legislators and regulators can advance responsible management of PFAS in biosolids through the following:

1. **MAINTAIN PROTECTIVE POLICIES:** Continue emphasizing source control and monitoring to reduce PFAS impacts prior to biosolids land application.
2. **MANAGE PFAS AT THE SOURCE:** Continue and strengthen policies related to PFAS use in commercial products and industrial processes, and support pollution prevention programs.
3. **PROTECT FARMERS AND RATEPAYERS:** Avoid policies that abruptly eliminate recycling and beneficial use and force utilities into high-cost landfill or out-of-state options. Help keep farmers in business and farmland in production through the higher yields and lower costs provided by biosolids.
4. **INVEST IN INNOVATION AND TREATMENT:** Fund research, pilot projects, source-control programs, and technologies that reduce PFAS before biosolids are generated or beneficially used.
5. **SUPPORT CLIMATE GOALS AND REGIONAL BIOSOLIDS MANAGEMENT:** Align biosolids policy with SB 1383 methane reduction and climate resiliency goals by preserving beneficial biosolids reuse options. Regulations should consider the impacts to all stakeholders to avoid unintended consequences for California ratepayers and farmers.

A ban on land application of biosolids would leave 1.4 to 2.1 million wet tons of biosolids with nowhere to go in California



Alternatively, Michigan's data-driven policies successfully reduced PFAS concentration in biosolids by 95% without creating unnecessary economic hardships for public utilities and ratepayers.

According to the Michigan Department of Environment, Great Lakes, and Energy (EGLE)

Maine's land application ban caused costs to increase by 175% on average.

According to the Maine Water Environment Association



Learn More

For additional information on PFAS and Biosolids Management, scan the QR code above to visit the California Association of Sanitation Agencies. www.casaweb.org