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Biosolids PFAS Legislative Guide

State approaches and model guidance for PFAS monitoring, source reduction, and land application of biosolids

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Acknowledgments

NACWA appreciates and thanks its legal affiliate AquaLaw for compiling this comprehensive and thoughtful legislative guide which will help clean water utilities navigate the growing uncertainties over biosolids management amidst concern over PFAS.

1. Introduction

This Biosolids PFAS Legislative Guide compiles and discusses various state-level approaches to addressing PFAS in biosolids as an aid to NACWA members engaged in or affected by state legislative action on this subject. While this Guide focuses on legislation, similar PFAS-related requirements may be established through notice-and-comment rulemaking, adoption of policy statements or guidance documents, and conditions and limitations in NPDES or other state-issued permits. This Guide references non-legislative examples that are useful for illustrating potential approaches or options.

The remainder of this Guide is organized in four sections. Section 2 addresses a range of approaches to monitoring PFAS levels at industrial user facilities, municipal wastewater treatment plants, and land application sites, and discusses related issues such as data management and use in policymaking. Section 3 addresses source track down studies and reduction strategies, typically focusing on industrial sources discharging PFAS-containing waste streams that may impact biosolids quality. Section 4 presents information on various bans or restrictions on biosolids land application associated with PFAS-related concerns whether substantiated or not. Section 5 covers a helpful range of miscellaneous topics, including policy-related advisory groups, consideration of the availability of biosolids management alternatives, the role and value of cost-sharing approaches including state grants, and liability protection for passive receivers of biosolids.

This Guide provides a broad range of examples from states on legislative, regulatory, or other policy approaches to addressing PFAS in biosolids. The level of policymaking to date across the United States varies considerably. As a result, some states are featured more prominently than others, and many states are not discussed at all. Call-out boxes are used to present practical advice and recommendations on many issues. For more in-depth information, each section includes footnotes with additional details and references.

This Guide should not be construed as legal advice and does not replace the need for and benefit of independent legal evaluation and advice in individual circumstances, not to mention the obvious need for utility management and government affairs considerations. Additionally, the Guide presents preferred legislative options given a range of possibilities in the abstract, but of course “real world” use and implementation is always a more complex calculus that necessarily must account for individual circumstances. In this vein, the label "Preferred Approach" is used to suggest approaches that are generally considered more reasonable and appropriate from the perspective of clean water utilities, but the viability of a particular approach as matter of state-specific policymaking will depend on state and local facts and circumstances.

2. Monitoring Requirements

One of the most prevalent steps that states have taken to address PFAS in biosolids is to require monitoring and reporting of PFAS levels. Monitoring has obvious, far-reaching practical implications. Test results can assist POTWs and regulators to map the location and significance of PFAS levels discharged by users of the sewer system, measured at wastewater treatment plants (influent, effluent, and biosolids) and observed at land application sites, and focus various resources accordingly. In addition, test results can provide a basis to affirm typical land application rates or to calculate a reduction, communicate with landowners, tenants, and farmers, trigger a source tracking and reduction program, and more. In general, a well-designed monitoring program is often a sensible first step to understanding current circumstances and laying a foundation for appropriate adjustments to applicable requirements, if any.

> **Recommendation:** In the absence of monitoring requirements, POTWs have discretion in determining whether to sample and test for PFAS. There is no standard approach to this issue and well-run clean water utilities nationwide have taken different approaches to the question of whether "to test or not to test." Many POTWs understandably have not tested for PFAS because sampling and testing is relatively expensive and there are often no clear standards to apply to the resulting data. However, there appears to be a trend toward increased monitoring. There are practical benefits to developing an early understanding of PFAS levels in the POTW's influent, effluent, and biosolids, regardless of the whether the results are deemed relatively "high" or "low," but also increased responsibilities for data management and communications.

Many states have completed influent and effluent sampling efforts at wastewater treatment plants (WWTPs) and/or POTWs; this approach is currently more widespread than testing specifically for PFAS in biosolids. States may need to invest time and resources to plan an expansion of PFAS sampling to biosolids. Maine was one of the first states to require specific testing of PFAS in biosolids in 2019[1] and other states have done similarly in subsequent years, as discussed later in this Section.

Monitoring and reporting requirements programs, like other requirements, can be put into effect through various processes. Washington's testing mandate came from legislation that directed agency-developed guidance.[2] Some states, like Connecticut, are working to incorporate PFAS monitoring requirements in general POTW permits.[3] Many states have included requirements in their Interim Strategy documents (see Colorado, Michigan, Minnesota, New York, and Maine[4] which used a memorandum with cited regulatory authority). Other states have embedded them in regulations (see Massachusetts, and Vermont) and permits (see New Hampshire and Wisconsin). A Massachusetts regulation requires a sampling and analysis plan within the application process for suitability certificates.[5] Michigan has a robust monitoring program requirement as well.[6]

Typical components that should be reviewed and considered as the monitoring and reporting scheme is being developed include covered facilities (POTWs or industrial users), sample location(s), frequency, test method, and reporting. Each is reviewed below.

Recommendation: NACWA members should assess which PFAS compounds will be considered. States typically take two approaches to defining or scoping PFAS. Taking the broader approach, Maine in its ban legislation, LD 1911 (2022), encompasses all"perfluoroalkyl and polyfluoroalkyl substances," defined as "any member of the class of fluorinated organic chemicals containing at least one fully fluorinated carbon atom." 32 M.R.S.§ 1732 (5-A). Connecticut used a similar definition in SB 292 (2024). In contrast, Michigan in its PFAS Interim Strategy Requirements specifically regulates only two PFAS analytes, PFOA and PFOS. Minnesota's Biosolids PFAS Strategy says all Permittees must sample for PFAS starting in September 2025, but the tiered response actions are only applicable to certain PFOA or PFOS results. Wisconsin's Interim Strategy also generally discusses PFAS but then only requires action based on the combination of PFOA and PFOS concentrations. Maryland requires testing for PFOA and PFOS in its 2024 PFAS in Biosolids Regulatory Update. Colorado's Biosolids-PFAS Interim Strategy discusses testing for all 40 PFAS compounds using EPA Method 1633, but its tiered action levels are focused on PFOS levels only, citing PFOS as an indicator compound. Another definition to decide on would be "biosolids" – some states have included septage in the definition along with sludge.

2.1 Sample Location

Sample location is a fundamental and important part of obtaining an accurate and representative sample result.

2.1.1 Biosolids Monitoring

2.1.1.a Point of Generation

Many POTWs would likely prefer a requirement to monitor biosolids at the plant because the POTW retains control over the process and can use well-trained plant staff to collect samples. In addition, unlike with monitoring at the point of use, the POTW can be more certain that there are no other biosolids or chemicals in the soil that could impact results.

The states that require monitoring at the point of generation for the most part give some leeway so long as the sample is representative of the biosolids produced at the facility. For example, in Colorado, the "sample location(s) within your facility must be representative of the volume and nature of the biosolids at the facility. Ideally, biosolids should be sampled after the end of the preparer's treatment process."[7] Minnesota has this same requirement.[8] Michigan requires representative sampling as well.[9]

2.1.1.b Point of Use

As suggested above, sampling at the point of use (i.e., at the land application site) can raise significant potential issues of concern to a POTW. First, the property itself may have received multiple years of biosolids and other chemical applications. Once biosolids is applied it is difficult, if not impossible, to identify PFAS that is related to a particular biosolids source and timeframe as compared to other PFAS-containing chemicals, like pesticides. Second, if the POTW is not itself conducting the sampling, it loses control over sampling integrity, which could lead to inaccurate results. Third, unless the POTW has an agreement

with a property owner that allows for entry, there will be additional steps needed to obtain consent to sample. See Section 2.6 below. Lastly, for monitoring conducted on farms, there may be other considerations in terms of sampling integrity to consider. For example, Michigan limits sampling staff to only one farm a day for biosecurity purposes, which means they try to minimize cross contamination in terms of animal diseases like foot and mouth, salmonella, swine influenza, etc.[10] This concept of limited farm visits could also apply to PFAS sampling to avoid false results because of PFAS sampling done at other locations.

Only a few states have point of use sampling, perhaps because of these potential downsides.

Of the states with monitoring at point of use, Maine was one of the first to sample soil at farm sites back in 2016 after milk was found to be contaminated with PFOS; this led to the creation of a PFOS action level in milk.[11] The knowledge that farms could have PFAS spurred additional legislation to sample by those farm sites. Under HB 1189 (2021), passed into law as L.D. 1600, Maine's Department of Agriculture, Conservation & Forestry was charged to build a "program to evaluate soil and groundwater for perfluoroalkyl and polyfluoroalkyl substances and other identified contaminants at locations licensed or permitted prior to 2019 to apply sludge or septage."[12] Testing of these sites is due by the end of 2025. The Department acknowledges that "the vast majority" of Maine's 7,000 farms likely will not have PFAS issues.[13]

In Connecticut, the Connecticut Agricultural Experiment Station runs a voluntary program that allows farms to sample and analyze PFAS in biosolids by sending out free sampling kits.[14] The samples must be brought to the Station within 48 hours of sample time.

Other point of use sites, beyond farms, can also be considered for sampling. One such example is reclamation sites where land application is used to repair disturbed lands. For example, in Michigan, biosolids help repair the soil health in mine reclamation programs, tree farms, and forest lands.[15] Other reclamation sites include overgrazed pastures.[16] These other point of use sites share the same downsides as at farms.

2.1.2 Industrial Discharges

Although it may or may not be directly connected to biosolids, several states have laws or policies requiring PFAS monitoring at industrial facilities. This can either be a part of a separate pretreatment program or a part of source tracking/reduction program after PFAS is found in biosolids; perhaps both.

POTWs support requiring PFAS monitoring at certain industrial facilities because POTWs are only passive receivers of PFAS chemicals and should not be responsible for third parties that profit from PFAS use or sale. However, POTWs should consider the underlying details of how this is accomplished. Questions of who will physically conduct the monitoring (the POTW or the industrial user) and which industrial facilities will be required to sample are of great importance.

2.1.2.a Who Takes the Sample and Who Pays

In 2024, the Maryland General Assembly passed legislation that requires the Maryland Department of the Environment to develop monitoring and testing protocols for significant industrial users with pretreatment permits that are currently and intentionally using PFAS by January 2026.[17] The Maryland Department of Environment was to also develop specified mitigation plans for addressing PFAS contamination from industrial discharge for pretreatment

premits by September 1, 2025.[18]

Maryland POTWs immediately had questions because the Department was not clear about certain details associated with the effort. Many POTWs were told that the Department expected that POTW staff would need to pull samples if a significant industrial user would not. The Department of the Environment later clarified that this was not the expectation. In addition, because the State's goal was to look at impacts of industrial PFAS use on the plant, the Department also wanted POTWs to pull plant influent and effluent samples at the same time as the industrial sampling. The Department failed to consider the availability of staff to simultaneously take samples at the industrial facilities and the plant. NACWA members reading this Guide should be sure that any legislation or policy clarifies the "who should sample" issue and object to any requirement for the POTW to be responsible for significant industrial user sampling.

In HB 1553 (2025) in Indiana, the proposed legislation (that did not pass) would have required "a person that prepares a biosolid, an industrial waste product, or pollutant-bearing water for a land application operation or as ingredients in a soil amendment or soil substitute" to submit a sample "of all biosolids, industrial waste products, or pollutant-bearing water" used in a land application process or as an ingredient in a soil amendment or soil substitute to the Indiana Department of Environmental Management for testing. The State would pay for the testing completed by the Department under the state agency testing program.

Obviously, POTWs would favor a state program to pay PFAS testing costs, which are relatively high. In addition to cost, labs certified to run these tests are limited. Any legislation or policy that requires that a POTW take the sample should be reviewed carefully. The "A" answer here is for the state requiring the sampling to pay for testing costs. The "B" answer is that a state that refuses to do so should recognize the costs for sampling and reduce the number of sampling events required to an achievable level.

2.1.2.b Which Industries Are Required to Sample

In response to the scope of industrial facilities that should be required to sample, states have different approaches. For example, in Virginia, the Code lists specific facilities that must conduct monitoring, including, for example, centralized waste treatment industrial facilities.[19] Virginia also uses the North American Industry Classification System (NAICS) to identify certain facilities (e.g., "Any industrial launderers defined by NAICS 812332;").[20] In contrast, Maryland's Code defines "industrial user" as "(i) A person who is engaged in manufacturing, fabricating, or assembling goods; or (ii) A member of any class of significant producers of pollutants identified under regulations adopted by: (1) The Secretary; or (2) The Administrator of the U.S. Environmental Protection Agency."[21] Federal, state, and local governments are excluded from the definition.[22]

In Massachusetts, industrial users that are also significant industrial users and that are "currently and intentionally using PFAS chemicals" are required to conduct monitoring.[23] Massachusetts adds those requirements when National Pollutant Discharge Elimination System (NPDES) permits and surface water discharge (SWD) permits are renewed; industrial plants are then required by their NPDES permit to test at their facility.[24]

2.1.2.c Preferred Approach

Virginia's or Massachusetts' approach is generally preferable to Maryland's because the list

of industrial facilities that must sample is clear. Maryland's POTWs asked what it means to "currently and intentionally" use PFAS chemicals. For example, does a facility that has a PFAS-containing fire extinguisher in the kitchen count as "currently and intentionally" using PFAS? In addition, Maryland's approach limits the type of facilities that must participate in monitoring. For example, because centralized waste treatment facilities are not currently and intentionally using PFAS chemicals they are not required to monitor, even though the PFAS loads they send to a POTW may be very high.

2.2 Frequency of Monitoring

POTWs reviewing state legislation or policies should also carefully consider the question of sampling frequency.

2.2.1 Standard Frequency

One approach for monitoring is to have it occur on a set schedule, whether that be annually or even quarterly. Annual programs include Minnesota,[25] New Hampshire,[26] and Vermont.[27] Wisconsin has annual sampling for 33 PFAS compounds for most facilities and once per permit term for lagoons and facilities that do not typically land apply.[28] That sampling applies to municipal and industrial materials, but not to industrial liquid waste, mixed materials, or septage.[29]

States may already employ more frequent (quarterly) testing for biosolids of Exceptional Quality (EQ) to bolster the heightened quality claims and public health protection promised.[30] Minnesota requires quarterly testing for EQ biosolids.[31] Massachusetts Department of Environmental Protection goes further and requires quarterly testing for all biosolid permits and has done so since August 2020.[32] Previously, Massachusetts had annual testing since June 2019.[33] Rhode Island passed substitute versions of H 5844 and S 0650 in 2025 to require operators with existing approval for distribution or land application to test biosolids quarterly for PFAS contaminants and submit the results to the Rhode Island Department of Environmental Management, starting October 2025.

2.2.2 Variable Frequency Based on Tonnage

Many states have chosen to set the frequency of monitoring based on how much tonnage of biosolids is produced. Maryland sets the testing frequency according to the amount of sewage sludge generated in a 365-day period on a dry weight basis:

Amount of Sewage Sludge Generated (per 365 day period - dry weight basis)	Testing Frequency
Greater than zero but less than 290 metric tons	Once every year
Equal to or greater than 290 but less than 1,500 metric tons.	Four times every year
Equal to or greater than 1,500 but less than 15,000 metric tons.	6 times every year
Equal to or greater than 15,000 metric tons.	Once every month

Relying on regulatory authority to create these requirements, the Maryland Department of the Environment added mandates into permits.[34] Colorado is similar – it also goes by the annual quantity of biosolids / the final product material derived from biosolids.[35] That frequency is as follows:

ANNUAL BIOSOLIDS PRODUCTION (dry short tons/year) *	PFAS Sampling Frequency
less than 319	Once per year
319 to less than 1,650	Once per quarter
1,650 to less than 16,500	Once per two months
16,500 and greater	3 samples per quarter

As seen in the tables, the sample schedules are comparable for the size ranges for both states.

2.2.3. Variable Frequency Based on Multiple Factors

Michigan takes a different approach, using several factors to determine the sample frequency; these include the POTW's size, whether an industrial pretreatment program is required, and past PFAS sampling.[36] All EPA-determined major facilities, industrial pretreatment program, and 2,218 groundwater permittees in the state must sample one time per year; the sample must be a representative sample taken before land application in the year they intend to land apply.[37] Other POTWs must take a representative sample at the beginning of a permit cycle before land applying, totaling once per five-year permit cycle (this after-permit-issuance sampling must be in the same year that land application will occur).[38] Michigan does note that these frequencies are subject to change if PFOS is found at 20 µg/kg or above.[39]

Indiana would have seen a slightly varied approach as well if its HB 1553 (2025) had passed in that it incorporated an inspection component. That bill would have set an annual testing requirement for the Indiana Department of Environmental Management of biosolids, industrial waste products, and pollutant-bearing water used in land application or as ingredients in soil amendment or soil substitute applied to land. Additionally, the bill would have set a separate quarterly inspection program of biosolids supplies for those products with a concentration of less than 20 ppb.

2.2.4 Preferred Approach

Of these options, POTWs would likely prefer the set schedule approach (whether that be based on a schedule or amounts of biosolids generated) over the Michigan approach which ties testing to past sampling. As NACWA members know, PFAS sampling can produce inconsistent results from event to event. Michigan's approach does not acknowledge that some PFAS results can be outliers for various reasons.

2.3 Testing Before Land Application

Another issue to consider is whether testing is required before land application. Not all states have mandated testing before application. Some rely on regular interval testing, while others do not address it. Michigan had a bill introduced in 2024, which failed to pass, that would have put the pre-application testing requirement into state statute:

> *Sec. 3131. (2) The department shall implement measures to restrict concentrations of PFAS in biosolids and sewage sludge and sewage sludge derivations used*

> *for land application. A person that prepares biosolids and uses sewage sludge or a sewage sludge derivative for land application shall test the sewage sludge or sewage sludge derivative for PFAS, as directed by the department, before the sewage sludge or sewage sludge derivative is applied and submit a report of the results to the department. A test described under this subsection must utilize a multilaboratory-validated method approved by the United States Environmental Protection Agency to analyze PFAS in biosolids, if that method is available. A person that prepares biosolids shall provide notification of the PFAS concentration present in the biosolids to each landowner and farmer where the biosolids are applied. The department, in consultation with the department of agriculture and rural development, shall promulgate rules under the administrative procedures act of 1969, 1969 PA 306, MCL 24.201 to 24.328, to implement this subsection.*[40]

Instead, the land application restriction resides in the Interim Strategy, which says there must be testing before application takes place.

Hawaii had a failed bill, HB 2785 (2024), which would have required a wastewater treatment plant to "test sewage sludge and any other residual material that is intended for land application for the presence of" PFAS via statute.[41]

Texas saw companion bills in 2025 that would require a manufacturer of commercial fertilizer to self-test before distribution, sale, or application of commercial fertilizer that would include biosolids and sewage sludge.[42] That legislation also contained maximum levels for several PFAS compounds for biosolids and sewage sludge and required the manufacturer to send a sample monthly for independent analysis. If a PFAS concentration is found, the manufacturer would have been required to throw that batch away, and if two or more samples were returned in a year above designated PFAS levels, the manufacturer receives a stop-order and its permit would be suspended until they could come into compliance. Intentional or knowing violations of selling, distributing, or applying commercial materials with PFAS levels above the regulated levels could result in a misdemeanor.

In H 292 (2025), Vermont would have required the Secretary of Natural Resources to test all biosolids, sewage sludge, or similar liquid wastes for PFAS before land application, and if found the person would be banned from land applying the biosolids, sewage sludge, or similar liquid wastes or selling them.[43] That bill also states sludge shall not be used as daily cover at landfills.

2.4 Test Method

Most states are on the same page regarding test method.

The predominant method of choice appears to be EPA Method 1633A. Colorado, Maryland, Massachusetts, Minnesota, Washington, and Michigan use Method 1633A.[44]

> **Recommendation:** EPA Method 1633A has not been promulgated in 40 CFR Part 136. POTWs may not wish to provide an NPDES "true, accurate, and complete" certification of results until the test method is adopted with the safeguards of the rulemaking process. Method 1633A is the preferred method and is awaiting promulgation into 40 CFR Part 136's, Guidelines Establishing Test Procedures for the Analysis of Pollutants.

Dry product testing is also the typical media choice. Colorado currently has an explicit warning

about using liquid samples, stating there are problems using Method 1633A with liquids and that the Department is working on resolving the issue. For liquid biosolid testing, the agency provides an agency contact.[45]

> **Recommendation:** PFAS sampling techniques can be complicated, and contamination is a frequent occurrence. Train your teams early to know the common pitfalls and look for funded opportunities to secure additional technical assistance and resources when available. Plan ahead and identify lab facilities and determine whether your state needs to expand its PFAS lab capacity and if lab certification procedures are needed.

New Hampshire recommends that biosolid permittees follow the Northeast Biosolids Residual Association guidance for PFAS sampling.[46] Other states have created their own sampling guidance, such as Michigan and Minnesota.

2.5 Reporting

2.5.1 Reporting to State Agency

Many states require immediate and electronic reporting to the relevant state agency. In Colorado, biosolid preparers must submit an excel form to an agency email address, also including lab report copies and potential source control information.[47] In New Hampshire, generators must also include descriptions in their annual report to the Department of Environmental Services on what they have done to reduce PFAS levels in their biosolids.[48]

POTWs should consider asking that any legislation and/or policy on third party reporting requires the third party to send PFAS results directly to the impacted POTW. Colorado's program would be improved by requiring submittal to POTWs, although in Colorado sampling information is available online for a POTW to see. In a state where that is not the case, the POTW would have to request data from the state using freedom of information procedures.

2.5.2 Publication / Disclosure

Some states require communication to both the agency and the farmers and landowners. Others require labeling requirements for biosolids products distribution. Minnesota requires communication to both the agency and landowners, and POTWs must share the PFAS levels found and source identification efforts, as well as what is being done to reduce the PFAS.[49] Wisconsin has a template letter for this scenario, emphasizing that there should be "open dialogue" and quick collaboration on PFAS reduction strategies.[50]

Indiana in its proposed HB 1553 (2025) would have required disclosure of the PFAS concentration just to the landowner, and distributors would have been required to affix a label stating the PFAS concentration and that "THIS PRODUCT CONTAINS A PFAS CHEMICAL."[51]

Iowa had an interesting feature to a proposed bill that did not pass, HB 723 (2025), in which after the POTW tested for PFAS, the landowner was given the chance to refuse to accept the sludge, as opposed to simply being informed that the biosolids had PFAS:

> *A wastewater treatment plant shall conduct a test of sewage sludge to detect the presence of a perfluoroalkyl or polyfluoroalkyl substance prior to providing the sewage sludge for application on land used for farming. If the test detects the presence of a perfluoroalkyl or polyfluoroalkyl substance, the wastewater treatment plant shall deliver a written notice of the test results to the owner of the land where the sewage sludge is to be applied. The owner may refuse to accept the sewage sludge without legal consequence.*

Other states take the information straight to the public. Massachusetts facilities must sample quarterly for PFAS in biosolids and upload the data to a public portal.[52]

2.5.3 Preferred Approach

Of these two options, required notification to the agency and landowner is preferable to simply uploading data for public review without any explanation of what the data means, whether it is consistent with previous monitoring, how levels compare to other consumer products, etc.

2.6 Other Requirements

States may wish to set additional requirements for their programs for PFAS biosolids sampling. For example, SB 312 (2023) was proposed legislation in Wisconsin that did not pass that would have required permission for entry before sampling non-state-owned lands and notification to landowner before disclosing information.[53] The bill also created an avenue for sampling by landowner request, paid for by the Wisconsin Department of Natural Resources upon several listed conditions. That bill text read:

> *(4) PFAS TESTING ON NONSTATE LANDS. If department staff or a 3rd–party entity contracted by the department seeks to conduct voluntary testing under this chapter for PFAS, all of the following shall apply:*
>
> *(a) If the department, or an entity contracted by the department, seeks to collect voluntary samples from lands not owned by the state based on permission from the landowner, such permission shall be in writing, and the department shall notify the landowner that such permission includes the authority to collect samples, to test those samples, and to publicly disclose the results of that testing. A landowner may revoke such permission at any time prior to the collection of samples.*
>
> *(b) The department may not publicly disclose the results of any PFAS testing conducted on samples taken from lands not owned by the state unless the department notifies the landowner of the test results at least 72 hours before publicly disclosing the test results…*
>
> *(5) PFAS TESTING REQUESTS. The department shall, in a timely manner, respond to requests from any person to conduct PFAS testing on samples taken from the person's property if practicable and if funds are available to do so, if there is a reasonable belief that PFAS contamination may be present on the property, and if existing information such as public water supply testing data is not available. The department may contract with a 3rd party to respond to requests for testing under this subsection.*

Additional topics could include appropriate sampling equipment and quality assurance/quality control

measures. To identify other ongoing issues for testing for PFAS in biosolids that could be addressed in model legislation, NACWA members may also wish to consult their analytical laboratories.

2.7 Use of Monitoring Data

PFAS monitoring often sets the stage for both regulatory and non-regulatory requirements. This subsection presents two different approaches for the subsequent decision-making process after a POTW has sampling results in hand. Some states have instituted a period of planning and program building, while others have established immediate actions that are triggered based on the PFAS levels found (tiered action levels). Specific programmatic components and/or response actions to consider under either approach include further monitoring, source tracking/reduction, altered land application rates, and notice to regulators and landowners, among others. High levels could result in restricted land application, as seen in several states, and even bans in an even smaller subset of states that have taken the strictest stances on PFAS in biosolids. Below are a range of options as seen in various states.

2.7.1 Period of Planning and Program Building

States may opt to take a gradual approach to build a program and obtain directives from the legislature for the agency to first assess statewide data before making official program decisions. More time allows for the necessary in-depth discussions between regulators, the regulated community, and any stakeholders to select the appropriate path forward to protect biosolids use, while also minimizing later conflict among different interests. As seen in the example below, to speed up that gradual process, legislation can include different dates for various deadlines to ensure efficient program progression.

Washington State has Senate Bill 5033, signed into law in May 2025, under which the Washington State Department of Ecology will review sampling levels collected by September 2028 and make recommendations based on a statewide assessment of PFAS biosolids levels by 2029. That timeline is laid out in the bill text as follows:

> *(6)(a) By July 1, 2026, the department must publish guidance to clarify PFAS chemical sampling requirements, including frequency and methodology, for facilities generating biosolids.*
>
> *(b) Facilities generating biosolids regulated under this chapter must sample for PFAS chemical in accordance with the department's guidance and have the biosolids analyzed by an accredited laboratory for PFAS chemicals using the United States environmental protection agency method 1633A as it existed in December 2024, no more than quarterly starting no later than January 1, 2027, and ending by June 30, 2028.*
>
> *(c) Facilities that are required to sample their biosolids for PFAS must provide all sampling results to the department no later than September 30, 2028.*
>
> *(d) By July 1, 2029, the department must submit a report to the appropriate committees of the legislature and the public with a summary of the analysis of the levels of PFAS chemicals in biosolids produced in and/or land applied in Washington state and recommendations on how to proceed based on the analysis.*[54]

Washington presents a model for states that may not have much statewide PFAS sampling that want

to start with data accumulation, while giving its state agency time to develop recommendations on next steps. This information-dependent approach allows the agency flexibility to form policies and actions that are best suited for that state and its specific PFAS biosolids issues.

Oregon has taken a similar approach but has partnered with a university to complete voluntary sampling at POTWs to quantify the PFAS concentration in biosolids used on cropland that is not used for human consumption. HB 2947 (2025) requires collaboration between the Oregon State University Extension Service and the College of Agricultural Sciences of Oregon State University, the Oregon Department of Environmental Quality, and wastewater providers to:

> *(a) Identify and quantify PFAS concentrations in selected biosolids from wastewater treatment facilities in this state;*
>
> *(b) Identify and quantify PFAS concentrations in the soil profiles of selected agricultural fields that do not produce crops intended for human consumption, on which biosolids analyzed in paragraph (a) of this subsection have been applied to land as a soil amendment, and in adjacent agricultural fields without a history of biosolid application;*
>
> *(c) Utilizing the data collected under paragraphs (a) and (b) of this subsection, determine the quantities of PFAS retained within and leached from soil profiles; and*
>
> *(d) Identify and quantify PFAS concentrations in crops not intended for human consumption grown in agricultural fields analyzed under paragraph (b) of this subsection.*[55]

The legislation included an appropriation ($140,000) to complete the study efforts and directly states that the identification of participating land application sites and treatment plants be left out.

Pennsylvania saw the Study of PFAS Chemicals in Biosolids Act, HB 1116 (2025), introduced but not passed, which would have called for the Pennsylvania Department of Environmental Protection to test biosolids used for land application on farmland, compare the PFAS concentrations in the soil and water on farmland with land application and farmland with no biosolids land application, analyze potential pathways for food supply contamination, examine the testing and treatment costs for PFAS in biosolids, and analyze other state laws on these topics.[56]

Some bills have a mix of current requirements immediately instated by state legislatures, with other pieces to be filled in later, after studies, rulemakings, or both by the relevant state agency.

Mississippi's proposed SB 2004 (2025) would have charged the Mississippi Air and Water Pollution Control Commission with setting a screening level that would determine what level of PFAS in biosolids would still quality as beneficial use.[57] The screening level was a part of what would have been a new annual PFAS testing requirement for sludge or sludge-derived compost in the land application licensing process. The Commission would also have been responsible for adopting related rules. Although not biosolids, the Commission also would have been required to study and develop a later plan to prohibit the land application of septage in the state. The bill did not pass.

Similar North Carolina bills introduced in the past few years, entitled PFAS Free NC, would have called for the NC Department of Environmental Quality to undertake several future actions – note, none of these bills passed.[58] The Department would have been required to study (1) the presence of PFAS in land-applied biosolids (and to identify the most common PFAS that may be present), (2) the propensity of PFAS to migrate off-site, and (3) the accumulation and persistence of PFAS in soil

and water that downgradient from land application sites. As NACWA members are aware, North Carolina has been a state that has received a lot of public scrutiny due to the Chemours Facility contamination in the Cape Fear River.

These later bill examples show an approach that evince both a current focus on PFAS in biosolids while also remaining future-looking. This balance is a way to signal that the state is taking PFAS in biosolids seriously while also demonstrating that the necessary additional details that require more time and information are being developed purposefully and appropriately.

Comparatively, a set of pending Massachusetts bills, H 109 and S 56 (2025), would initiate the development of a comprehensive statewide master plan on sludge management techniques and disposal needs and a short and long-range program for reduction of sludge throughout the Commonwealth, but would also simultaneously institute a ban on the land application of biosolids.[59] The Plan components would include (1) a technical assistance and funding program for cities and towns to develop local sludge management plans; (2) a template local sludge management plan which cities and towns shall adopt and may alter if certified; (3) goals and measurable benchmarks for the reduction, processing, toxicity and disposal of sludge in the commonwealth and related methods to achieve such; (4) criteria that would trigger plan updates; and (5) financial estimates to implement the plan. Sludge reduction goals and benchmarks could include, but are not limited to, specialized landfills for sludge disposal; transportation of sludge out of the commonwealth; implementation methods for reducing the volume and toxicity of sludge; the development of new or improved reduction technologies and methods; and remediation of toxic chemicals and substances in wastewater and in sludge. The Plan would be due in December 2026.

2.7.2 PFAS Levels Trigger Responsive Actions

An approach seen increasingly across states involves guidance documents setting forth responsive actions to be followed straightaway once triggered by the relevant PFAS level in biosolids.

Michigan, Maryland, Minnesota, Wisconsin, and New York all have tiered response action frameworks based on how much PFAS is found in biosolids. Michigan and Maryland have lower levels at which biosolids with PFAS would be declared industrially impacted and therefore not suitable for land application (100 µg/kg), with Wisconsin setting that level higher (150 µg/kg). Minnesota is in the middle of those levels (125 µg/kg).

The Michigan Interim Strategy's tiered actions encompass a comprehensive approach related to land application rates, sampling, source reduction, and disposal options. The responsive actions are as follows.[60]

Michigan Level	Responsive Action
PFOS or PFOA at or above 100 µg/kg	• Deemed industrially impacted and cannot be land applied. • Notify Water Resources Department (WRD) Biosolids Program Staff of PFAS results by submittal via MiEnviro Portal. • Arrange for alternative treatment and/or disposal of solids. • Sample the biosolids source effluent (within 30 days). • Implement a source reduction plan including an investigation of potential sources of PFOS and/or PFOA to the sanitary wastewater and resulting biosolids.

PFOS or PFOA at or above 20 µg/kg (but less than 100 µg/kg)	Considered elevated under the updated strategy and trigger the following requirements: • Reduced land application rate of 1.5 dry tons per acre (dt/acre) or submittal of an alternative risk mitigation strategy for EGLE approval a minimum 14 days prior to land application. • Sampling of the biosolids source effluent (within 30 days). • Implement a source reduction plan including an investigation of PFOS and/or PFOA to the sanitary wastewater and resulting biosolids.
PFOS and PFOA below 20 µg/kg	May be land applied with no additional requirements after submittal of results via MiEnviro Portal and communication of results to the landowner/farmer.

Wisconsin also follows a comprehensive approach in its Interim Strategy where several follow up actions are triggered dependent on what PFAS sample levels are present.[61]

Wisconsin Level	**Responsive Action**
Sum of PFOA and PFOS concentrations values generally at or above 150 µg/kg	• Department should not approve new or transfer land application sites when combined values are above 150 µg/kg PFOA/PFOS. Future permits may include language prohibiting the authorization of the land application of biosolids and industrial sludges with PFAS concentrations above 150 µg/kg. • Immediately notify DNR Staff. • Sample effluent and investigate potential PFAS sources to develop a source reduction program, if the WWTF operators have not already done so. • Arrange alternative treatment or disposal besides land application.
Sum of PFOA and PFOS concentration values generally above 50 µg/kg but below 150 µg/kg	• Immediately notify DNR Staff. • Sample effluent and investigate potential PFAS sources to develop a source reduction program, if the WWTF operators have not already done so. • To reduce overall loading to a land application site, reduce land application rates to no more than 1.5 dry tons per acre (or submit to the department for an approval of an alternative risk mitigation strategy in an updated sludge management plan prior to land application). • Prior to initial land application at a site, provide the PFAS analytical results to the landowner/ farmer (if different) along with DNR contact information and additional information related to PFAS work in Wisconsin. See template letter for assistance with such communication. • If land applied, track the cumulative application rates on each land application site and report to the department. • WWTF operators may decide it appropriate to arrange for alternative treatment or disposal of solids.

Minnesota is another state that provides a detailed list of options in its Biosolids PFAS Strategy:[62]

Minnesota Level	Responsive Action
PFOA or PFOS concentrations ≥125 µg/kg	• The biosolids are considered industrially impacted. • Land application is not allowed, and the Permittee must arrange for alternative management of biosolids. Alternative management of biosolids most likely includes landfilling and/or transferring to another facility. The options available, viability, and cost of these alternatives will vary widely for each WWTF and may require transportation of the biosolids to an out-of-state facility. • The Permittee must notify the MPCA within 10 days of receiving the test results. • The Permittee must initiate source identification and reduction work by generating, submitting and implementing a PFAS PMP within 180 days. If a PFAS PMP has previously been created, the facility must expedite the implementation of the existing plan. • The Permittee must sample its wastewater plant effluent and have it analyzed for PFAS, if not already required by its NPDES/SDS Permit. • The MPCA may also consider additional site-specific requirements.
PFOA or PFOS concentrations 51-124 µg/kg	• Prior to land application, the Permittee must provide the PFAS analytical results to the landowner and farmer (if different than the landowner) along with the MPCA contact information and additional information related to PFAS work in Minnesota. The MPCA will provide a template for the notification. • The Permittee must initiate source identification and reduction work by generating, submitting and implementing a PFAS PMP within 180 days. If a PFAS PMP has previously been created, the facility must expedite the implementation of the existing plan. • If land applied, the Permittee must reduce the loading of land applied biosolids to 1.5 dry tons per acre or provide an alternative risk mitigation strategy for MPCAs review and approval. • If land applied, the Permittee must track the cumulative application rates on each land application site and report this information to the MPCA. • If appropriate, the Permittee must plan for alternative management options for biosolids.
PFOA or PFOS concentrations 21-50 µg/kg	• Prior to land application, the Permittee must provide the PFAS analytical results to the landowner and farmer (if different than the landowner). The MPCA will provide a template for the notification. • The Permittee is encouraged to initiate or, if it's already begun, continue with source identification and reduction work • If land applied, the Permittee must track cumulative application rates on each land application site and report this information to the MPCA.

PFOA or PFOS concentrations ≤ 20 µg/kg	Permittee must let the landowner and farmer (if different than the land-owner) know that PFAS sampling was conducted, and the results are available upon request.

Maryland states in its Biosolids Regulatory Update four tiers in its sample responses that deal solely with the land application rate:[63]

Maryland Level	**Responsive Action**
PFOS or PFOA is 100 µg/kg or above	Land application of the biosolids is recommended to be stopped.
PFOS or PFOA is at or above 50 µg/kg, but less than 100 µg/kg	Recommended application rate for land application of biosolids must be lowered to 1.5 dry tons per acre or less.
PFOS or PFOA is at or above 20 µg/kg, but less than 50 µg/kg	Recommended application rate for land application of biosolids must be lowered to 3 dry tons per acre or less.
PFOS concentration below 20 µg/kg and a PFOA concentration below 20 µg/kg	May be land applied with no additional requirements after submission of results.

New York's Interim Strategy also has a somewhat streamlined tiered approach that suggests additional sampling and no "recycling" if above certain levels:[64]

New York Level	**Action Required for Biosolids that are Recycled**
50 or greater, dry weight (µg/kg or ppb)	DEC will take action to prohibit recycling until PFOS or PFOA concentration is below 20 ppb.
> 20 but < 50, dry weight (µg/kg or ppb)	Additional sampling required. DEC will take appropriate steps to restrict recycling after one year if the PFOS or PFOA levels are not reduced to below 20 ppb.
20 or less, dry weight (µg/kg or ppb)	No action required
*In addition to dry weight results, DEC may require analyses using the SPLP (Synthetic Precipitation Leaching Procedure) and use those results to determine whether the biosolids source can be recycled.	

In Indiana's proposed HB 1553 (2025), that bill would have also required statutory tiered responses if approved. Those response actions would have been placed straight into the Indiana Code, a marked difference from the guidance documents listed above. Biosolids producers would have been required to send samples to the state agency and wait until the Department confirmed that there was a PFAS level less than 100 ppb for one or more PFAS compounds. If higher than 100 ppb, no land application would have been allowed for the biosolids. If in between 20 and 90 ppb, there would be a mandated reduced 1.5 dry tons per acre rate of application.

These states have chosen to scale up limitations based on PFAS levels found in the biosolids sampling, reserving the most severe consequence, land application prohibitions, for the highest levels. Maryland's approach focuses on reduced land application rates, whereas Michigan and Wisconsin and others add in other aspects like informing the state agency of the sample level and source reduction. Minnesota requires wastewater sampling for the highest results if not already done. The suite of options in the tiers reflect the typical directions taken by states based on PFAS levels seen at this time around the country.

Another important consideration for states is not only the level of PFAS in biosolids at which to require action, but the extent of consequences attached to not responding appropriately. Thresholds are typically seen as non-enforceable, but also as signals to do more if the number is exceeded. There are pros and cons of setting an enforceable threshold versus a non-enforceable threshold.

Reminder: Enforceable thresholds may not be necessary in your state to address PFAS in biosolids for several reasons. PFAS prevalence data may not show a current PFAS problem; biosolids producers could be following interim strategy directives already; or state agencies may take the position they already have the necessary authority to act as needed.

Recommendation: Proactive Public Disclosure of PFAS Data. There are practical measures that utilities can proactively take to share PFAS data to provide the public with transparency and to ensure data is presented responsibly. Utilities should consider posting results on their websites. In doing so, important context can be provided about the actions of the utility to keep biosolids safe for use. In terms of a programmatic response, the utility may want to consider whether to make changes to its sewer use requirements and land application practices, or alternative management options such as landfilling in an appropriate case. If testing reveals PFAS levels of interest/concern, the utility should consider follow-up monitoring program for the treatment plant and any major users of the system that may be suspected sources of PFAS.

If a state is collecting PFAS data, POTWs should work to establish a system to ensure that the state provides data to the POTW first before sharing it with the public. This gives the POTW the opportunity to correct any incorrect information and/or to request removal or qualification of any data that may be an outlier. It also gives the POTW the time to prepare to field questions from the public on the data itself.

2.7.3 Preferred Approach

Whether to take an initial assessment period or use pre-selected action responses based on tiered PFAS level results will ultimately depend on how prevalent PFAS is in the state's biosolids. States with little-to-no data may want to start with data collection. States with extensive monitoring data indicating relatively high levels in some instances are more likely to prescribe some variety of activities based on PFAS levels found. Tiered actions have primarily been employed using the state's overall biosolids guidance documents rather than statute. Some states, like Indiana, have seen legislative efforts to place response actions straight into state code. Legislation that instead directs state agencies to study PFAS levels, build a biosolids program, and/or lay out response actions, affords the state agency flexibility to assess the related successes and failures in real-time and pivot as need be to redirect program efforts to needed priorities, as opposed to simply reacting to challenges that may arise out of a new or amended statutory section and needing to pass more legislation to tweak issues.

KEY TAKEAWAYS

- Critical issues to consider when reviewing legislation or policy on monitoring include who performs the sampling and testing; covered facilities; sampling location; sampling frequency; test method; and dissemination of monitoring data.
- POTWs would benefit from the State establishing clear, understandable rules for monitoring with POTW input.
- POTWs would benefit from a deliberative process to setting new programmatic requirements taking into account the resulting monitoring data as opposed to establishing definitive regulatory standards before the data are available.
- Several states are using similar numeric PFAS levels as automatic triggers in a tiered response action approach that includes designating biosolids with higher levels of PFAS as industrially impacted, reducing land application for mid-level contamination, and/or requiring no additional restrictions for biosolids with lower PFAS levels. Additional tracking and/or source reduction actions are applicable based on what tier the sample falls into. Note, this approach typically presents itself in guidance documents rather than legislation.

States to look at:
Colorado, Connecticut, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New York, Vermont, Virginia, Washington, Wisconsin

[1] ME DEP, DEP Announces Testing of All Sludge Materials Before Land Application (March 22, 2019).
[2] See Senate Bill 5033 (2025).
[3] CT DEEP, Per- and Polyfluoroalkyl Substances (PFAS) in Municipal Wastewater Treatment Facilities.
[4] The state plans to issue the general permit sometime in 2025 and plans to monitor POTWs' influent, effluent, and sewage sludge for PFAS.
[5] Maine is currently under a ban during which no biosolids can be land applied, negating the need for testing before land application. The testing/sample plans do remain a part of the regulatory landscape. See 06-096 C.M.R. ch. 419, § 4(A), 06-096 C.M.R. ch. 419, § 4(C), 06-096 C.M.R. ch. 405, § 6(8)(2), and 06-096 C.M.R. ch. 405, § 6(D).

[6] 310 CMR 32.12. The plan is supposed to include the proposed sampling methods and sampling frequency; the proposed sampling locations; the proposed procedure for handling samples; the name and address of the laboratory to which the samples will be sent for analysis; and the procedure the laboratory proposes to utilize to check and analyze the samples. Id.
[7] MI EGLE, Biosolids and Sludge PFAS Sampling Guidance, (page 1) (4/2022).
[8] Colorado Monitoring Framework, Biosolids PFAS Sampling and Analysis Plan (SAP) for Colorado (3/2023).
[9] MPCA, Biosolids PFAS Sampling, Analysis and Reporting Guidance (page 3).
[10] MI EGLE, Biosolids and Sludge PFAS Sampling Guidance, (page 1) (4/2022).
[11] MI EGLE, General PFAS Sampling Guidance (1/2024).
[12] ME DACF, PFAS Response.
[13] ME Ch. 478, (HP 1189 – LD 1600) (2021).
[14] ME DACF, PFAS Response.
[15] Connecticut Agricultural Experiment Station (CAES), Monitoring PFAS in CT Agricultural Soils. EPA Method 1633A is used.
[16] MI EGLE, Biosolids, https://www.michigan.gov/mdard/environment/rtf/biosolids.
[17] EPA, Land Application of Biosolids.
[18] MD SB 956 (2024); MDE must then develop in coordination with POTWs and the SIUs mitigation plans to address the PFAS contamination from the industrial discharges by September 2025.
[19] Id.
[20] Va. Code § 62.1-44.34:32.
[21] Id.
[22] MD Code, Environment, § 9-353(b).
[23] Id.
[24] MD Code, Environment, § 9-354(a).
[25] MassDEP, PFAS in Industrial Discharges.
[26] All permittees will need to sample once per cropping year before they land apply starting September 1, 2025. MPCA, Biosolids PFAS Sampling, Analysis and Reporting Guidance (page 4).
[27] RSA 485-A XVI-c (a).
[28] Vermont Solid Waste Management Rules § 6-1306, Table 2.
[29] WI DNR, Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS.
[30] Id.
[31] EPA defines "Class A 'Exceptional Quality' or 'EQ' sludge" as "treated sewage sludge that meets the most stringent pollutant, pathogen, and vector attraction reduction limits in Part 503." EPA, Land Application of Biosolids.
[32] MPCA, Biosolids PFAS Sampling, Analysis and Reporting Guidance (page 4).
[33] Quarterly testing for PFAS is required for facilities with Approval of Suitability (AOS). MassDEP, PFAS in Residuals.
[34] Id.
[35] MDE, PFAS in Biosolids Regulatory Update, August 20, 2024. MDE cites 26.04.06.06C and 26.04.06.40A(7) as its regulatory authority for PFAS testing in biosolids.
[36] CO DPHE, Colorado Biosolids-PFAS Interim Strategy.
[37] MI EGLE, Land Application of Biosolids Containing PFAS Interim Strategy (2022).
[38] Id.
[39] Id.
[40] Id.
[41] HB 5614 (2024).
[42] HB 2785 (2024).
[43] HB 1674 / SB 886 (2025). The bill also includes compost, wastewater residuals, industrial or sewage septage, lagoon residuals, or other material intended for use as a fertilizer, soil amendment, topsoil replacement, or other similar agricultural purpose.
[44] H 292 (2025).
[45] MI EGLE, Biosolids and Sludge PFAS Sampling Guidance, (page 8).
[46] CO DPHE, PFAS and Biosolids.
[47] NH DES, Biosolids webpage.
[48] CO DPHE, PFAS and Biosolids.
[49] NH Admin Rules Env-Wq 809.09.
[50] MPCA, Minnesota Biosolids PFAS Strategy (page 1).
[51] WI DNR, Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS.
[52] HB 1553 (2025).

[53] MassDEP, PFAS in Residuals.
[54] SB 312 (2023) Enrolled.
[55] SB 5033 (2025).
[56] HB 2947 (2025).
[57] HB 1116 (2025).
[58] SB 2004 (2025).
[59] HB 881 (4/10/2025; most recent version).
[60] H 109 / S 56 (2025).
[61] MI EGLE, PFAS Interim Strategy for Biosolids Containing PFAS (2024).
[62] WI DNR, Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS, (2024).
[63] MCPA, Minnesota Biosolids PFAS Strategy (2025). Permittee refers to the POTW.
[64] MDE, PFAS in Biosolids Regulatory Update – August 20, 2024.
[65] NY DEC, DMM-7/ Biosolids Recycling in New York State – Interim Strategy for the Control of PFAS Compounds.

3. Source Reduction Programs

Track down and source reduction programs have been used successfully to address other emergent contaminants or chemicals of concerns (for example, PCBs). This approach can be useful to track and reduce PFAS sources discharging into the sewer system and decrease PFAS in biosolids. Reducing PFAS at the source properly places responsibility with PFAS sources and can alleviate problems for POTWs, land application contractors, and landowners.

3.1 Voluntary Versus Mandatory Source Reduction Programs

Some states have mandated source track down and reduction programs by state law, through legislation or regulation (see Maine and Maryland); in others, the state environmental agency implements track downs through guidance. Before a state goes down the road of mandating source tracking to drive PFAS reductions, a POTW may find it helpful to conduct a voluntary review of the likely PFAS sources in its system. A POTW with a voluntary source tracking program can point to its work and object to the state imposing additional enforceable requirements. Having a voluntary program is always favorable to a mandatory program. In addition, this is an opportunity for the POTW to remind the state that it is not a PFAS source and that it views the state as a partner in seeking PFAS reductions.

3.2. Who Builds the Source Reduction Program

A preliminary decision is what entity is responsible for building the source reduction programs. State-led initiatives would provide utilities with a formula to follow with less administrative pre-work, but also potentially less input on program components. POTW-created programs allow for flexibility that allows a utility to tailor their program to their surrounding sources and plant but also require more time and resources to develop.

3.2.1 POTWs

Although source reduction emphasis directly implicates users and producers of PFAS chemicals, POTWs pay a central role in initiating the management and expectation of where those reductions will come from. Many states place the tracking of PFAS firstly on POTWs, sometimes making use of already existing statewide pretreatment programs to identify industrial dischargers. As noted in Section 2.1.2, POTWs are not a PFAS source. Rather, POTWs are passive recipients of chemicals that flow through collection systems and into the treatment works.

Michigan's Department of Environment, Great Lakes, and Energy has been at the forefront of PFAS work. In 2018, through a series of letters, the agency began requiring POTWs to identify sources and achieve source reduction via the State's pretreatment program. All POTWs with industrial pretreatment programs had to (1) identify industrial users who could be loading PFAS into their systems, (2) sample probable sources and the plant, and (3) require source reduction at confirmed sources.[1] In 2024, the Department formalized an Interim Strategy for biosolids land application that requires POTW source tracking depending on monitored levels of PFOS and PFOA. Those with biosolids with levels below 20 µg/kg are not required to source track; biosolids with levels above 20 µg/kg are required to implement a source reduction plan to include an investigation of PFOS and PFOA inputs to wastewater and biosolids.[2] See Section 2.7.2 above.

Like Michigan, the Minnesota Pollution Control Agency has adopted a Biosolids PFAS Strategy with sampling requirements that apply to all POTWs that "intend to apply biosolids to land." The

Agency's Strategy also makes POTWs create PFAS pollutant management plans for certain levels of PFAS if not already drafted. Beginning September 1, 2025, all permittees that land apply must sample biosolids for 40 PFAS compounds once per cropping year (September 1 through August 31). Permittees, i.e., POTWs, with PFOA or PFOS concentrations ≥ 50 µg/kg "must initiate source identification and reduction work by generating, submitting and implementing a PFAS PMP within 180 days. If a PFAS PMP has previously been created, the facility must expedite the implementation of the existing plan." Permittees with 21-50 µg/kg PFOA or PFOS are encouraged to initiate or continue with source identification and reduction work. See Section 2.7.2 for further information on Minnesota's tiers as they relate to source track downs.

Colorado is implementing an Interim PFAS Strategy for biosolids. As part of this Strategy, the Colorado Department of Public Health and Environment is requiring "preparers" of biosolids[3] to pursue a PFAS Source Control Program if PFAS levels in the biosolids exceed certain trigger levels for PFOS (the Department has chosen PFOS as "an indicator compound"). For biosolids with PFOS levels less than 50 µg/kg there are no additional requirements. However, if levels are above 50 µg/kg , the preparer must develop a Source Control Program intended to reduce or eliminate non-domestic PFAS sources. The Department states that: "At a minimum, the program must investigate potential non-domestic PFAS sources and report to the division measures taken to reduce non-domestic PFAS sources." The Source Control Program must be submitted within three months of the lab report date. Within one year, the preparer must submit a report providing its findings and the status of the program. Importantly, the Source Control Program does not need to be completed within the one-year time frame; the preparer is directed, if needed, to "coordinate final actions, timelines, and reporting with the division."

Recommendation: When developing a source tracking program, other POTWs that have already developed a plan can be of great help. There is power in numbers. If the state receives source tracking programs from multiple POTWs, the state may be more likely to approve the text, in lieu of negotiating with each individual utility.

Recommendation: The devil is in the details when it comes to source track down requirements. For example, a track down requirement that the POTW must personally contact and inspect any potential sources of a pollutant of concern would be very burdensome as compared to a requirement to conduct a desk-top analysis of potential sources in the service area using publicly available databases (for example, the state's voluntary remediation program files). To the extent possible, a POTW should participate in discussions on how to frame a track down and reduction strategy and advocate for workable, cost-effective options. In addition, a POTW should resist any strategies that make the POTW responsible for reductions that are needed at a private company; this is a promise that POTWs cannot reasonably keep.

3.2.2 The State

In Maine, the Maine Department of Environmental Protection is responsible for source reduction. Maine passed LD 1503 in 2021 that requires that the Department develop and implement a program to reduce PFAS in discharges to air, water, and land. As part of the legislation, the Department must provide grant funding to POTWs to develop, expand, or implement pretreatment standards for PFAS and to educate PFAS sources on proper management.[4] That bill text reads:

> *9. PFAS source reduction program. To the extent funds are available and in consultation with relevant stakeholders, the department shall develop and implement a program to reduce the presence of PFAS in discharges to air, water and land by encouraging the use of safer alternatives and the proper management of materials containing PFAS. The program may include:*
>
> *A. Information resources targeted to industrial or commercial users of PFAS;*
>
> *B. Education of the general public;*
>
> *C. To the extent funds are available, grants to operators of publicly owned treatment works for the purposes of developing, expanding or implementing pretreatment standards for PFAS and education of users on sources of PFAS and proper management;*
>
> *D. To the extent funds are available, grants to municipalities for the purposes of educating solid waste disposal users on sources of PFAS and proper management; and*
>
> *E. Other efforts determined by the department to be prudent to achieve the program's purpose.*

The overall emphasis of LD 1503 is on safe alternatives and proper management, with some specific program components recommended. Targeted audiences for the agency's efforts include industry/commercial users, POTWs, solid waste disposal users, and the general public via educational outreach. Note, that the list is not exhaustive and is dependent on available funding.

3.2.3 Collaboration between POTW and State

In terms of proposed legislation that did not pass, Florida saw the introduction of SB 1692 in 2024, which would have required POTWs to coordinate with the Florida Department of Environmental Protection via statute on source reduction efforts by creating a pretreatment program focused on PFAS and 1,4-dioxane.[5] The Department would have worked with wastewater facilities with biosolid programs, among others, to implement the pretreatment program.[6] Specifically, the Department was to supply specific guidance as to the types of industrial users to include in a required inventory as probable PFAS sources by November 2024. Wastewater facilities would have in turn been required to conduct an inventory, submit it for department review by July 1, 2025, and notify industrial users of their inclusion on the inventory within 30 days of submittal. Identified industrial users would be required to have obtain a pretreatment permit or order by July 2027; the legislation's text encouraged to take action to reduce PFAS levels before permits were issued. In the bill text, the Department would have had the ability to expand the initiative to all wastewater facilities with NPDES permits. The Department would have been in charge of a separate industrial inventory requirement for major facilities that are direct dischargers.[7] Additionally, the bill proposed discharge limits for PFOS (10 ng/L) and PFOA (170 ng/L) and allowed for local limits by wastewater facilities in permits, while noting that violations would not subject the industrial user to civil or criminal penalties during the first two years after a permit or order was issued.

3.2.4 Industrial Dischargers

Maryland placed the burden on industrial users when it passed the Protecting State Waters from PFAS Pollution Act in 2024, as discussed in Section 2.1.2.a. These new sections of the Environment Code require that significant industrial users begin monitoring and reporting on the level of PFAS chemicals beginning on September 1, 2025. Beginning in 2026, those SIUs must implement programs to reduce PFAS discharged to a POTW. The law applies to SIUs who have a pretreatment permit and who are "currently and intentionally using PFAS chemicals." Maryland's law underscores the importance of applicability. SIU is defined to exclude federal, state, and local governments. Notably, Maryland's legislation excludes industrial sources that may be sending high PFAS concentrations to the plant even though they are not significant industrial users (for example, dry cleaners[8]).

3.2.5 Preferred Approach

NACWA members should anticipate that source tracking and reduction will likely be – and should be – included in model legislation. Utilities should focus on where to place the burden of tracking PFAS sources and requiring the actual reductions – with the industrial sources, the state agency, or the utility. Ideally the answer is likely a combination, with most of the work falling on the state agency and/or industrial users; but as NACWA members know well, utilities will want to stay both informed and involved to ensure their have adequate knowledge of the process and a satisfactory ability to enforce such reduction measures.

3.3 General Source Reduction Program Provisions

PFAS source tracking and reduction is not a concept novel to biosolids and is a topic that requires more detail than is provided in this Guide for full coverage.[9] In terms of creating model legislation, there are additional aspects of a source reduction program that NACWA members will want to make reference to or expound upon in model legislation.

3.3.1 Who Source Tracks

The source tracking component of source reduction programs is the introductory step to narrow down where the specific reductions need to occur and is a technique that has broadly applied to reduce PFAS levels in more media than just biosolids. In building a PFAS source reduction program, source identification should be an initial step.

> Key elements of a POTW source tracking program could include: (1) general information on the plant and on the appropriate program contact; (2) identification of any prior PFAS source reduction efforts by the POTW; (3) identification of any known sources of PFAS; (4) a discussion of whether the POTW will require additional sampling by identified sources; (5) identification of any prior PFAS source reduction efforts by identified sources; (6) an explanation for how the POTW will address potentially unknown sources of PFAS (e.g., through use of existing databases for industrial facilities); and (7) flexibility for the POTW to determine based on reduction alternatives, estimated potential reductions, and costs which facilities will be directed to take additional reduction steps. Remember, a POTW that holds the pen can add reasonable terms and caveats to its program.

Often POTWs are the most equipped to source track because they have an established sampling network and the technical expertise. For POTW-led source tracking, because PFAS are ubiquitous, and because of the difficulties in assessing PFAS sources from domestic flow, most utilities start with industrial customers. Those can be identified through industrial categories, pretreatment program participation, or surveys. The state environmental agency often has datasets and public-facing tools available online that present statewide PFAS data that can help utilities and other entities ascertain where there may be PFAS sources upstream. If the tracking is voluntary, a POTW can structure the tracking in an efficient way (for example, compiling a list of significant industrial users and then identifying those who may have PFAS-impacted processes). The end goal is to step through the list, prioritize facilities, and then contact them about their PFAS usage and ways to reduce loadings to the plant. These tracking efforts can prepare a POTW for future discussions if the permit-issuing authority suggests including source tracking in a discharge permit and/or related reductions.

3.3.2 Reduction Methods

This is the "how" of reductions. Reductions of PFAS at the source can be accomplished in multiple ways. In its Industrial Pretreatment Program PFAS Initiative, Michigan suggests pollutant minimization plans, equipment or tank change outs and cleaning, product replacement, and pretreatment to removal PFAS pre-discharge.[10] Many states have passed legislation relating to phasing out PFAS in both industrial and consumer products. Legislation can leave the specific source reduction method open-ended to broaden the array of treatment techniques and input choices that sources can adopt and/or change or it can designate specific methods that the drafter would like to encourage first and/or above others.

3.3.3 Enforcement

Depending on how a source program is established, via legislation, regulation, guidance, or other, enforcement will be a feature to consider. Enforceable programs are often rooted in legislation and regulation. One advantage is that when requirements are enforceable, that usually means the agency is expected to set forth clear expectations so that affected entities know what is expected of the biosolids programs very early on. This also allows regulators to focus on those facilities having compliance issues. Having an enforceable program with more teeth could lead to lower PFAS levels appearing in biosolids and less overall contamination on a quicker timescale. In terms of disadvantages, enforceable programs would take more initial resources to put in place.

Non-enforceable programs show an acknowledgment of an issue and put in place a measurable expectation of how a utility or discharger should respond to a certain contamination event. There is also more of an open nature to this arrangement as it signals that the agency is open to further developing its official response to a particular concern rather than escalating a situation immediately. Programs set outside of regulation could still achieve the same effect while also encouraging collaboration and cooperation between sources, utilities, and the state agency. Plus, an agency would be hard-pressed to argue noncompliance if the number is only in guidance.

KEY TAKEAWAYS

- Voluntary source tracking and reduction efforts can help avoid or lessen the severity of agency-imposed regulations.
- States have seen source reduction programs created through both legislation and guidance documents, with guidance documents being more prevalent. The common directive is to require the formation of a program, without including program specifics.
- Utilities should pay close attention to what entity is responsible for the various roles under a source reduction program, such as identifying and reaching out to industrial users, monitoring, and enforcement efforts.

States to look at:
Colorado, Maine, Maryland, Michigan, Minnesota

[1] MI EGLE IPP PFAS Initiative.
[2] MI EGLE Biosolids webpage.
[3] "Preparer" is defined as "either the person (entity) who generates biosolids during the treatment of domestic sewage in a domestic wastewater treatment works (including from lagoon cleanouts) or the person (entity) who derives a final product material from biosolids" who also meets certain other criteria (e.g., the entity generates 30 dry tons or more of biosolids in a year and land applies those biosolids, sends them to a third party for additional processing, or distributes them as Class A biosolids.
[4] ME Ch. 477 (HB 1113 – LD 1503) (2021).
[5] FL SB 1692 (2024).
[6] "Wastewater facility" was defined to include the "biosolids management facility" of a facility that "discharges waste into waters of the state or which can reasonably be expected to be a source of water pollution."
[7] Major facilities are those permitted under the NPDES system classified as such by the USEPA.
[8] MD Ch. 556 (HB 1153) (2021); MD Ch. 557 (SB 956) (2021).
[9] See e.g., NACWA, A Clean Water Utility's Guide to Considering Source Identification, Pretreatment, and Sampling Protocols for PFAS.
[10] Michigan State University PFAS Contamination in Agriculture: Michigan's Response.

4. Land Application Restrictions

An active area of legislation among numerous states has been restricting the amount of biosolids that can be land applied based on PFAS presence and/or levels. While Maine enacted a total ban on land application of biosolids, fortunately this extreme approach remains an outlier.

4.1 Application Rates

Michigan's land application restrictions require testing before application can take place. Based on PFAS concentrations, biosolids that have a PFOS or PFOA concentration at or above 20 ug/kg, but below 100 ug/kg[1] are subject to a reduced land application rate of 1.5 dry tons per acre or submittal and approval of an alternative risk mitigation strategy to the state's Department of Environment, Great Lakes, and Energy 14 days before land application takes place.

If the PFOS or PFOA is at or above 100 micrograms per kilogram (µg/kg), those materials cannot be land applied.[2]

Maryland takes a very similar approach to Michigan, but its testing before application requirement is in state policy. Its reduction rate is the same, lowered to 1.5 dry tons per acre or less but for PFAS at or above 50 µg/kg to 100 µg/kg.[3] Thus, Maryland's lowest PFAS trigger level is slightly higher than Michigan's.

Minnesota is similar as well, setting the reduction rate for PFOA or PFOS between 51 and 124 µg/kg, or permittees must develop an alternative risk mitigation strategy for Minnesota Pollution Control Agency's review and approval.[4] For lower levels of PFOA or PFOS (between 21 and 50 µg/kg), Minnesota requires permittees to track cumulative application rates on each land application site and report it to the agency.[5]

Wisconsin also reduces any future land application rates to no more than 1.5 dry tons per acre for the sum of PFOA/PFOS at 50 µg/kg – 149 µg/kg.

Recommendation: Michigan, Maryland, and Wisconsin are good examples of states that have set an application level, 1.5 dry tons per acre, that is likely not achievable. At this level, farmers will likely need to consider adding commercial fertilizer, which may chill their interest in biosolids land application. If faced with a similar approach, POTWs should push for levels that still allow for land application at a lower but achievable rate.

POTWs should also consider pushing for narrative land application requirements that can provide meaningful protection in lieu of stricter rate application limits. See 4.2 below for more.

4.2 Other Requirements

General land application concepts that protect public health and the environment could be tailored to address PFAS in biosolids, to avoid more consequential actions such as reduced land applications or bans. In other words, a biosolids generator could proactively consider whether existing requirements could be expanded (for example, increasing the size of setbacks) or new requirements could be added if there are PFAS concerns. NACWA members are likely familiar with these current individual state restrictions for when a generator wishes to land apply biosolids. Virginia is a state that provides some examples of these approaches.

4.2.1 Setbacks & Buffers

Setbacks require minimum distance between biosolid application and other buildings, water bodies, and structures. In its regulations, Virginia details numerous setback requirements to adjacent features; similar selections could safeguard specific areas of concern within a state. Some of Virginia's setbacks include occupied dwellings (200 feet), property lines (100 feet), water supply wells (100 feet), public water supply reservoirs (400 feet), segments designated as Public Water Supply under water quality standards (100 ft), agricultural drainage ditches (10 feet), and more.[6] Virginia increases the setback distance for surface waters dependent on whether there is a 35-foot vegetated buffer (100 feet if no buffer and 35 feet if buffer is present).[7] For states that find some concentration of PFAS in biosolids, a particular setback could be required to offset PFAS migration concerns.

4.2.2 Additional Site Management Practices

Often states require biosolids management plans to obtain land application permits. In Virginia, that plan must include the permit application materials, a nutrient management plan for each application site, and an operations and maintenance manual.[8] Some states have weather restrictions that limit application during rain and snow and on frozen ground. In Virginia's regulation, biosolids can only be land applied on snow-covered ground if the snow is not more than one inch and "the snow and biosolids are incorporated within 24 hours of application."[9] Other ways to address site suitability includes designating soil types and permeability, as well as slope restrictions. In Virginia, for example, the slope grade cannot exceed 15%.[10]

Biosolids land application is well-regulated and NACWA members should review their own state laws and materials for a full assessment of other requirement possibilities.

4.3 Land Application Bans Are Generally Rejected

The benefits of biosolids have been well documented for some time.[11] Nonetheless, taking a very conservative approach to PFAS concerns, a couple of states have passed complete bans on biosolids land application in recent years. As you can see through this Guide, after consideration in many states the broad consensus is that bans are inappropriate (and result in failed bills).

In 2022, Maine passed a complete ban on all biosolids, irrespective of the level of PFAS.[12] Briefly,

Maine's statute prohibits the land application of sludge, compost material that includes sludge, or any other product derived from sludge. It also bans the sale or distribution of compost generated with sludge from a wastewater plant and any other product derived from the same.

In 2024, Connecticut passed SB 292 – a bill baning biosolids with PFAS – prohibits a person from using, selling, or offering for sale biosolids or wastewater sludge that contain PFAS in the state as a soil amendment as of October of that year.[13] Vermont had failed legislation in 2025 that would have similarly prohibited land application or sale of biosolids, sewage sludge, or similar liquid wastes if PFAS are identified.[14] Arizona also saw a 2025 bill introduced (but not passed) that would have banned "the distribution and use of any fertilizer, including biosolids and sewage sludge" that contains PFAS starting December 31, 2026.[15] The bill would have also made distribution of any pesticide that contained PFAS an unlawful act, although the bill stopped short of including that offense as a misdemeanor.[16]

Recently, Massachusetts introduced legislation that would require the Massachusetts Department of Environmental Protection to promulgate regulations to phase out the use, sale, or distribution of "sludge" without the Department's site-specific approval.[17] Sludge is defined as the "solids, semi solid, and liquid residue that results from a process of wastewater treatment or drinking water treatment." The bill specifically mentions that disposal or landfilling is not affected. Massachusetts has another set of bills, H 109 and S 56 (2025), that would prohibit the application of biosolids ("treated or untreated sewage sludge") on land. The bill also prevents the sale of fertilizer or soil amendments derived from or containing biosolids, unless the manufacturer can prove the product has no measurable PFAS. This legislation was introduced while the Department is halfway through a study to assess the current and near-term landscape for POTWs managing wastewater sludge in the Commonwealth.[18] The ultimate goal of the two-part study is to present sludge management recommendations, with Part One concluding that there is currently limited capacity for sludge management, with anticipated capacity shortfalls in the future.[19] Land application is identified as a major sludge management strategy that is important to retain.

The Texas Legislature considered HB 1674 in 2025, introduced by Delegate Kerwin from Johnson County (Johnson County is the home to the plaintiffs suing Synagro for alleged impacts from biosolids land application on their properties). HB 1674 was left pending in committee and would have prohibited the manufacture, sale, distribution, or application of biosolids with concentrations above certain levels for 17 different PFAS analytes. The bill would have made it a misdemeanor criminal offense to intentionally or knowingly sell, distribute, or apply these biosolids.[20] HB 160 (2025) was also introduced in special session and would have banned applying biosolids onto on agricultural land (used for the production of plants or food grown for human consumption, animal grazing, or raising livestock) or incorporated into the soil of agricultural land.[21]

In Hawaii's HB 2785 (2024), that proposed legislation (that did not pass) would have prohibited land application permits from authorizing the land application of any "sewage sludge or any other residual material" that has any amount of PFAS "on land used for agronomic purposes, on land where drainage tiles have been installed, on land that drains into waters of the State or lands in a five hundred-year floodplain." The 2025 Session saw a reintroduction of this bill in SB 738 (2025).[22]

Mississippi has also seen a proposed bill, SB 2004 (2025), that would have banned "sludge generated from a municipal, commercial or industrial wastewater treatment plant" to be applied to or spread "on any land in this state." That bill died early on in committee.

Vermont had its own ban bill in H 303 (2025) that would have prohibited a person from applying or spreading "septage, sludge, or biosolids," compost containing the use of such materials, or any other

product meant for agricultural purpose derived from or containing such materials.[23] The bill did not advance past the committee of origin.

Should a state go to these lengths, disposal and management of biosolids becomes an immediate and important issue. Not only are there capacity limitations at landfills and onsite storage at plants, but there are increased fees for trucking and disposing the biosolids.[24] Internationally, in October 2024, Canada implemented an interim PFAS standard for imported biosolids at less than 50 ppb PFOS on a dry weight basis.[25] In Maine's legislation, the state adopted a provision that allows "the disposal or placement at a solid waste landfill of any of the materials."[26] That component was crucial to addressing an already complex ban situation. Vermont, on the other hand, had a separate bill, H 0674 (2024), that would not allow solid waste, landfill leachate, septage or sludge to be disposed of in solid waste or landfills.

If land application bans are proposed, utilities should suggest legislative alternatives. Instead, for example, a bill could suggest that the relevant state agency establish guidance on sampling for PFAS in biosolids and set (or increase) a sampling schedule to assess current PFAS levels. The legislature or state regulatory agency could also be required to conduct a study on alternative management options (e.g., landfill disposal or incineration), and the environmental impacts, indirect consequences, and costs of a statewide biosolids ban; these subsequent findings could be presented in a report to the legislature. Studies such as these, like the Massachusetts study on the landscape for POTWs managing wastewater sludge, are making some headway with legislators to demonstrate what issues can occur if a ban on land application passes. See also the Draft Template Bill in the Model Legislative Template for additional bill components that could be suggested in lieu of a ban.

As an in-between step before complete bans, there are moratoriums that set temporary bans. New York and Oklahoma saw bills on moratoriums on biosolids land application introduced (and fail) in recent years. The New York bill, Assembly Bill A6192B (2025), would have created a five-year ban for:

> *biosolids generated from a publicly or privately owned or operated wastewater treatment plant; compost material that included in its production biosolids generated from a publicly or privately owned or operated wastewater treatment plant; any other product or material that is intended for use as a fertilizer, soil amendment, topsoil replacement or mulch, or for other similar agricultural purposes including parks, golf courses, or other non-crop land applications, that is derived from or contains biosolids generated from a publicly or privately owned or operated wastewater treatment plant.*[27]

The bill did carve out landfill disposal for these biosolids ("The moratorium shall not apply to: (a) the disposal or placement at a solid waste landfill of any of the materials that are prohibited from application, spreading, sale or distribution by this section"). A6192B did pass the State Senate, although it did not make it through the House.[28] Because that bill failed, the state relies on its Materials Management Program Policy 7, which sets a bar of 20 ppb – if any sampling reveals levels above this, the Department of Environmental Conservation will take action to prohibit recycling until the concentration is reduced.

Oklahoma had Senate Bill 3 (2025), which would have banned the land application of sewage sludge and biosolid material as fertilizer in Oklahoma on and after July 1, 2027, with no new permits in the meantime and renewals up to the Department of Environmental Quality's discretion. The legislation included a phased reduction of those materials up until that July 2027 date. The reduced levels are set forth as follows:

B. 1. Not later than September 1, 2025, all persons or entities permitted to land apply sludge or biosolid material shall reduce the amount of such material land applied by at least twenty five percent (25%).

2. Not later than September 1, 2026, all persons or entities permitted to land apply sludge or biosolid material shall reduce the amount of such material land applied by at least fifty percent (50%).

C. Not later than September 1, 2025, any person or entity permitted to land apply sludge or biosolid material shall submit a plan for full cessation of such actions to the Department of Environmental Quality. The plan shall be compiled and submitted in the form and manner prescribed by the Department. The Department shall promulgate rules to implement the provisions of this section.

There was no discussion of carving out disposal of biosolids material at landfills in that bill text. An additional piece of Oklahoma legislation, SB 268 (2025), which would ban application of municipal, commercial, and industrial biosolids upon passage, does contemplate landfilling those materials. SB 268 also directs the Department of Environmental Quality to study and develop a long-term plan to prohibit the land application of septage in the state and for the Department of Agriculture, Food, and Forestry to draft a plan to protect agricultural producers who are impacted by land application of municipal/commercial/industrial sludge. The Department must also submit a report to the legislature on the costs of PFAS removal, remediation, and recovery to help those agricultural producers.

Oklahoma demonstrates that different approaches can appear within a state and that educating legislators will be a pivotal step once an approach is selected. In 2024, there was an Oklahoma bill by the same sponsor as SB 268 that presented a different measure for allowing land application based on whether DEQ can determine that the PFAS concentration in nearby drinking water sources does not exceed the applicable drinking water standards, pursuant to the Oklahoma Water Resources Board and EPA for PFAS.[29] That bill did not move past the committee assignment in the house of origin.

The Importance of Biosolids: In advocating for your municipal program, never miss an opportunity to highlight the importance of biosolids to legislators and regulators. According to the National Biosolids Project, approximately 50 percent of biosolids produced in the country are land applied as of 2018. Farms nationwide take advantage of the availability of biosolids and are able to cut down on fertilizer costs; additional businesses and industries also make use of the materials. Inherent regulatory safeguards (agronomic rate applications, buffers from water sources and wells testing, and reporting to state and federal authorities) exist to ensure land application is safe. Emphasize your utility is willing to put in place other measures to ensure the issue of PFAS in biosolids is adequately addressed.

4.4 EPA's Draft Sewage Sludge Risk Assessment for PFOA and PFOS

On January 14, 2025, during the last week of the Biden Administration, EPA released a Draft Sewage Sludge Risk Assessment for Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonic Acid (PFOS) (Draft Risk Assessment).[30] The Draft Risk Assessment was meant to encapsulate EPA's current scientific understanding of the risk PFOA and PFOS in land-applied sewage sludge poses to human

health and the environment. After estimating the presence (how much in the environment), exposure (amount of contact for humans/wildlife), and toxicity (severity of health effects) of PFOA and PFOS using a central tendency risk assessment, EPA ultimately concluded that "under certain scenarios and conditions, land-applying or disposing of sewage sludge containing a detectable level (i.e., 1 ppb or more) of PFOA or PFOS could result in human health risks exceeding the agency's acceptable thresholds for cancer and non-cancer effects."[31]

The vast majority of municipal biosolids are likely to exceed EPA's very low 1 ppb concentration assumption used for modeling purposes. (See Section 7.2.2 for examples of states that set no threshold requirements for biosolids with 20 µg/kg of PFOA or PFOS). NACWA submitted comments on the Draft Risk Assessment, detailing its concerns and emphasizing that the assessment needed more research and further work.[32] NACWA explained that the Draft Risk Assessment does not reflect actual agronomical practices; fails to model risks for the general public (instead creating the extreme scenario in which a farm operators rely entirely on their own property for subsistence for 10 years); is overly conservative in its modeling, methods, data, and assumptions; and lacks any discussion regarding PFAS chemicals in consumer products and/or alternative other fertilizers. These serious limitations, and the additional reasons detailed in the comments, should be fully understood before reviewing the assessment.

Although EPA stated the Draft Risk Assessment is not a regulatory action and the 1 ppb modeled concentration value should not be considered a standard[33] – instead, it is meant to inform future risk reduction and regulatory actions – it could be misinterpreted to generate misguided and unworkable standards for biosolids. The draft risk assessment creates a very real risk that individual states will use the Draft Risk Assessment inappropriately to the detriment of POTWs.

Case in point is Maryland, which saw legislation introduced in 2025 that would have created a de facto ban after relying on the Draft Risk Assessment's unrealistic modeling PFAS concentration. Senate Bill 732 and House Bill 909, both withdrawn before committee votes, would have limited the total PFOA and PFOS concentration of sewage sludge in a new or reissued sewage sludge utilization permit to the lesser of (1) 1 µg/kg, (2) the level established in health-based standards adopted by EPA, or (3) a level that is more stringent than the 1 µg/kg level, as established by the Maryland Department of the Environment.[34] The bill also required a demonstration of compliance with the 1 µg/kg limit by sampling "the entire quantity of sewage sludge to be land applied" no more than 14 days before land application unless the sewage sludge is hauled directly from the generator to the field and is not stored off-site or mixed with any other material before land application.

The Fiscal and Policy Note prepared by the Maryland General Assembly staff identified significant effects on local finances and operations, as well as meaningful effects on small business.[35] The Note acknowledges that EPA's Draft Risk Assessment's findings are preliminary yet the Maryland Department of the Environment itself says that none of the state's sewage sludge could currently meet the proposed PFOA/PFOS concentrations of 1 µg/kg.[36]

Maryland biosolids generators were understandably very concerned about the impacts of the legislation on the viability of their programs. Although the sponsors negotiated with stakeholders, including Maryland's POTWs, on a potential alternative approach, those discussions were not successful. Further legislative activity is anticipated in 2026.

If faced with state legislation that would ban biosolids land application, advocacy for alternatives that will support a better understanding of PFAS in biosolids in the state and the continued safe land application of biosolids, rather than upend biosolids management arbitrarily, will be critical. For example, a bill that requires a landfill capacity study to identify the amount of viable disposal

capacity and any cost impacts associated with relying solely on landfilling would provide legislators and stakeholders with useful information on whether land application restrictions would harm POTWs and their ratepayers. Likewise, a bill that requires POTW monitoring gives a state hard data to use to decide future biosolids policy with a clear understanding of which communities will be adversely impacted absent state relief or assistance. This Guide includes an Model Legislative Template with template legislative language that a member can use if confronting problematic legislation.

KEY TAKEAWAYS

- States who wish to ban land application, although less prevalent, often do not consider the reality that viable, cost effective alternatives for the materials do not exist.
- Reductions in the amount of biosolids that can be applied based on PFAS levels, although broadly more acceptable, can constitute a de facto ban on land application if levels are set too low for current farming practices.
- Look to other general biosolids land application restrictions for more moderate concepts to help minimize PFAS contamination in biosolids.

States to look at:
Connecticut, Hawaii, Maine, Maryland, Michigan, Minnesota, Mississippi, New York, Oklahoma, Texas, Wisconsin

[1] MI EGLE Interim Strategy. If the PFOS or PFOA is at or above 100 micrograms per kilogram (µg/kg), those materials cannot be land applied.
[2] Based on authority in 26.04.06.06C and 26.04.06.40A(7).
[3] MDE, PFAS in Biosolids Regulatory Update, August 20, 2024.
[4] MPCA, Minnesota Biosolids PFAS Strategy (page 3) (2025).
[5] Id. at 4.
[6] 9VAC25-32-560(B)(3)(e)(1), Table 1.
[7] Id.
[8] 9VAC25-32-410.
[9] 9VAC25-32-560(B)(3)(d)(5).
[10] 9VAC25-32-560(B)(3)(d)(3).
[11] NACWA Biosolids and PFAS: Maintaining Management Options is Critical to Communities and Sustainability.
[12] In perhaps the most well-known example of PFAS-biosolids legislation is Maine's LD 1911, "An Act To Prevent the Further Contamination of the Soils and Waters of the State with So-Called Forever Chemicals" was passed in April 2022.
[13] Public Act 24-59 (SB 292), signed June 5, 2024.
[14] H 292 (2025).
[15] HB 2646 (2025).
[16] Id.
[17] H 2450 / S 1504 (2025).
[18] MassDEP, Current and Near-Term Management of Massachusetts Wastewater Sludge. Part 2 of the study will assess regulatory issues, source reduction strategies, and technologies for material minimization and PFAS treatment for sludge. It is expected in 2025.
[19] Id. at 108.
[20] HB 1674 (2025).
[21] HB 160 (2025).
[22] The bill did not pass in the 2025 Session. Hawaii does have carryover legislation for its 2-year sessions; the current session is

2025-2026.
[23] H 303 (2025).
[24] NACWA Cost Analysis of the Impacts on Municipal Utilities and Biosolids Management to Address PFAS Contamination (2020); EPA Biosolids Technology Fact Sheet (2018).
[25] T-4-132 – Per- and polyfluoroalkyl substances (PFAS) standard for commercial biosolids imported or sold in Canada as fertilizers.
[26] 38 MRSA §1306, sub-§7(B).
[27] Assembly Bill A6192B / Senate Bill S5759 (2025).
[28] New York has carryover legislation, and bills from 2025 (the first year of the two-year legislature) will automatically be introduced in the 2026 session. Rules of the Assembly, Rule III § 2.
[29] SB 1969 (2024).
[30] 90 Fed. Reg. 3859 (Jan. 15, 2025).
[31] That estimates risk assuming median (50th percentile) exposure conditions. EPA Draft Risk Assessment (page v).
[32] NACWA Draft Risk Assessment Comments (August 21, 2025).
[33] The 1 ppb level does not appear anywhere in 40 C.F.R. Part 503 regulations for sewage sludge. "This draft risk assessment is not a regulation and is not EPA guidance." EPA Draft Risk Assessment (page iii).
[34] HB 909 / SB 732 (2025).
[35] SB 732 Fisal and Policy Note.
[36] Id.

5. MISCELLANEOUS

5.1 Use of Advisory Committee (Stakeholders or Experts)

Advisory committees could be a good idea for various reasons – they present a non-legislative place to review potential issues of importance relating to biosolids land application and vet ideas. This has been done in Michigan.

In 2017, Michigan formed MPART, the Michigan PFAS Action Response Team. [1]MPART is comprised of a team of seven state agencies, including EGLE. Under the MPART umbrella, there is a Land Application Workgroup[2], tasked with reviewing the "presence and impacts of land application of residuals (biosolids, industrial residuals, and byproducts)" by taking the following steps:

- **Source Reduction Strategies** -- Implement where available
- **Mitigation** – Mitigate public health and environmental risks from future residual land application
- **Investigation** – Review past applications where PFOS, PFOA, and other "compounds of concern" have been applied at higher rates before their phase-out
- **Support** – EPA and others to develop risk-based criteria for residuals land application

The Workgroup includes representatives from the Michigan Department of Agriculture and Rural Development (MDARD) and the Michigan Department of Health and Human Services (MDHHS). The Workgroup's recent actions include: (i) forming a Subcommittee to find facilities of most concern that have historically used PFAS in industrial production and may have land applied residuals; (ii) updating EGLE's Interim Strategy for Land Application of Biosolids Containing PFAS; (iii) updating the Biosolids and Sludge PFAS Sampling Guidance; (iv) developing tools for WWTPs and their contracts to communicate with landowners and farmers on PFAS in residuals; and (iv) sampling.

Although they are not biosolids specific, there are also PFAS advisory committees in Maine and Virginia. In Maine, the Advisory Committee is tasked with providing support to farmers facing contamination of their land and/or water by PFAS. The Maine State Legislature provided $60 Million for this effort.[3]

Recommendation: Although perhaps an obvious point, any PFAS advisory committee should include experts on the topic, including POTW representatives. State legislatures can be prone to only appoint the heads of state agencies to review a topic. At a minimum, the state's association of counties or municipalities should be tapped to participate to represent local views. More appropriately, several POTW managers should be included to share their expertise on operating a treatment plant. Having this level of involvement always results in a better end product.

Suggested language from Virginia's statute to include POTWs at the table:

> *§ 62.1-44.34:33. PFAS Expert Advisory Committee; report.*
>
> *B. Members of the Committee shall be appointed by the Director and shall include representatives of public drinking water and wastewater system owners, representatives of public health organizations, potential PFAS source categories, and conservation organizations with expertise in water treatment, water science, or PFAS chemistry, and other experts as determined by the Department. Members of the Committee shall receive no compensation for their service and shall not be entitled to reimbursement for expenses incurred in the performance of their duties.*

In 2024, the Virginia General Assembly passed a statute[4] directing the Virginia Department of Environmental Quality (DEQ), in consultation with the Virginia Department of Health (VDH) to convene the PFAS Expert Advisory Committee. The Committee's role is to assist the state in identifying PFAS sources through monitoring, review public and private lab capacity issues, and recommend options for reductions of PFAS in source waters that are "causing exceedances of PFAS MCLs."

5.2 Availability of Alternative Biosolids Management Options

As noted in Section 2.7.2, Michigan and Wisconsin have both required that POTWs with high levels of PFAS in their biosolids "arrange for alternative treatment and/or disposal of solids."

Obviously, this simple statement fails to reflect the lack of tested and affordable PFAS treatment options for POTWs, the lack of landfilling capacity in many states, and the difficulty in siting and permitting new biosolids incinerators.

In some cases, proponents of these measures do not fully understand these pressures; in other cases, the proponents are less concerned with local operational and fiscal realities than they are with perceived human health risks. Regardless, States should do their due diligence and try to understand these realities before implementing ill-conceived bans. Maine is a prime example of a state that failed to look before it leapt; because of the ban, biosolids were sent to Canada, and then sent back to Maine when Canada imposed biosolids bans, with wastewater ratepayers footing the bill.

Recommendation: POTWs should serve as a key resource, explaining their current biosolids management programs. POTWs are the experts on why their programs land apply, landfill, or incinerate and those associated costs. POTWs are the experts on what other options are available for treatment. POTWs can proactively approach state legislators to share this information if problematic legislation is filed or threatened. POTWs should focus on key data points to share, including the availability of alternative options (e.g., there is only landfilling capacity for X tons of biosolids a day statewide) and costs (e.g., if we

States should consider starting with a literature review or an analysis of what other states are doing on this front. States should review the status of treatment pilot projects and seek POTW input on associated feasibility and cost. States should understand the value of biosolids and land application to the state, the POTW, landowners, and the public. Biosolids land application still has a vital role to play until other reuse or disposal options are developed.

Hawaii saw introduced legislation that would have required state agency involvement in disposing of PFAS-laden biosolids. HB 2785 (2024) would have required via statute that the Director of the Hawaii Department of Health to "adopt rules providing for the safe disposal and sequestration of sewage sludge and other residual materials accumulated at a wastewater treatment plant that contain any amount of" PFAS.

Indiana's proposed HB 1553 (2025) would have required Indiana's state environmental agency to establish a program to treat or dispose of biosolids, industrial waste products, or pollutant bearing water with a PFAS of over a 100 ppb or one or more PFAS chemicals.

As discussed in Section 2.7.1, Massachusetts has pending legislation that would have the Massachusetts Department of Environmental Protection investigate and study the sludge disposal and management needs of the Commonwealth.[5] Included in that bill is a provision that would allow cities and towns the ability to document the additional costs incurred for sludge disposal, enabling 100% reimbursement for the current fiscal year and the 3 years preceding the effective date of the act.

A bill introduced in Vermont would call for the Secretary of Natural Resources to submit a regional long-term septage, sludge, and solids management plan to the state legislature concerning the "safe and cost-effective disposition of septage, sludge, and biosolids."[6] One of those plan components would be a proposal on how regional acceptance facilities (established in the bill) would manage the acceptance and disposition of septage, sludge, or biosolids containing PFAS.

5.3 State Grant Funding

State funding is another aspect of potential legislation that warrants consideration. Many states have directed appropriations to PFAS efforts generally, in terms of discovering where it is in the state and sampling and monitoring efforts for surface water, groundwater, and influent/effluent. Some have awarded grants for projects that focus on PFAS in soil under broader PFAS and Clean Water programs, like Wisconsin, Michigan, and Colorado. A smaller subset has gone further and focused on PFAS in biosolids, like Maine's PFAS Fund.

Wisconsin's Clean Water Fund Program has an emerging contaminants program that gives out low-interest loans and principal forgiveness allocations to public utilities. The scoring rubric for biosolids (and effluent) looks at PFAS concentration, financial need, and project type.[7] Biosolids projects are in the category that receive the maximum points.[8] Eligible projects are able to recoup costs for adhering to the state's Interim Strategy, which include biosolids sampling and storage, processing, and/or disposal expenses.[9] Additional PFAS minimization plan grants are also available for source identification and reduction efforts for PFAS in biosolids at POTWs.[10]

Due to the higher costs of alternative treatment and disposal, state grant funding could be a helpful

way to facilitate initiating some of those treatment projects and establishing beneficial reuse or disposal procedures. In Michigan, Marquette County received a grant of approximately $1.3 million through the Substantial Public Health Risk Project Program (SPHRPP) to assist the former K.I. Sawyer Air Force Base in disposing PFAS-laden biosolids instead of keeping them onsite and land applying them.[11]

Part of Colorado's PFAS Cash Fund involves a Takeback Program, which allows the CDPHE to purchase and dispose of PFAS-laden materials. Signed into law on June 29, 2020, the Fund illustrates some of the logistics to contemplate when establishing a fund: an initial appropriation amount followed by credited funds – in this case through a fuel truckload/shipment fee; dedicated funds – money left over remains in the fund and is not transferred to the general fund; a cap – the fee is not charged if the available balance is at $8 million; and a reporting requirement on amounts credited, number of grants, materials taken back, newly located PFAS, and suggested legislation or policy changes.[12] Under the Fund, there is also a Grant Program for water utilities and technical assistance provision to communities, stakeholders, and regulatory boards/commissions to develop human health-based standards and PFAS disposal methods.[13]

Maine's Department of Agriculture, Conservation & Forestry set up the $60 million PFAS Fund to help farmers deal with alternatives to land applying after the statewide ban for biosolids was enacted.[14] Several of those Fund components include providing financial assistance to farmers and buying PFAS-impacted land from farmers.[15] Another is a research and grant program, meant to support research topics that help farmers deal with PFAS impacts and to connect researchers with landowners.[16] Major grants range from $100,000 to $500,000 and targeted grants are awarded for $100,000 and less.[17] Topics that received grant awards include analyzing PFAS update by plants, rapid detection and monitoring of PFAS in solids, the transfer of PFAS in biosolid soils to poultry and eggs, and some treatment techniques.[18]

Recommendation: Take stock of the current financial climate in your state to know whether dedicated funding for PFAS in biosolids is available, or whether moneys could be reached with existing clean water programs. New dedicated funding sources may take more initial effort – think advocating with legislators, budget discussions, and related administrative work to set the fund up logistically, but securing funding in bigger, wider programs each year also takes a certain amount of continual effort for each application period that may have numerous competing applicants.

5.4 Liability Protection

From a federal law perspective, the principal liability exposure for a POTW is the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund, found at 42 U.S.C. §9601, et seq.). Of course, this is just one, albeit a significant piece of laws that may impact biosolids land application that contains PFAS chemicals. Most states have their own common law (created by judges) and statutory law (embedded in the state's code) liability schemes that must also be considered.

Because CERCLA is so overarching and powerful, in terms of environmental clean-up responses, much of the focus to date on biosolids land application and PFAS has been on potential liability under this federal statute.

It is a well discussed topic how public utilities could bear the heavy burden of needing to make capital-intensive upgrades to treat PFAS. Adding a level of protection for POTWs and biosolids through liability protections would mean recognizing the value of land application, but also refusing to improperly pass along costs that ultimately belong to PFAS manufacturers. Utilities understand the need for increased testing and source reduction to address contamination and are stepping up to ensure that biosolids are safe for use.

NACWA has been working diligently to protect water systems from undue CERCLA liability and reinforce the polluter pays approach. The U.S. Congress is currently considering the Water Systems PFAS Liability Protection Act (H.R. 1267, introduced February 12, 2025, and immediately referred to the House Subcommittee on Water Resources and Environment). The bill defines a protected entity to include POTWs and provides that no person may recover costs or damages from a protected entity under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C 9601, et seq.) "for costs arising from a release to the environment of a covered perfluoroalkyl of polyfluoroalkyl substance." A protected entity is only covered if it transports, treats, or disposes of PFAS consistent with applicable laws.[19]

NACWA strongly supports passage of H.R. 1267. POTWs who are able should do so as well. In addition, POTWs should be clear in any messaging about biosolids land application and PFAS that POTWs are not the source of PFAS. We are merely the recipient of these materials and should be given legal protection as such. Under a polluter pays approach, responsibility for these materials lies with the industrial facilities that manufacture or use PFAS and benefit from that activity.

5.4.1 Polluter Pays Principle

Given the potential for CERCLA liability, POTWs are understandably concerned that while working to provide critical clean water services in compliance with all applicable federal and state laws, they may nonetheless be unfairly held responsible for pollution created by unrelated, third-parties, whether that be an industrial facility that uses PFAS chemicals as a part of their processes (for example, carpet manufacturers) or a service provider that uses PFAS chemical to clean materials (for example, a rug cleaner). Holding a POTW responsible in either scenario violates the polluter pays principle, which lays the responsibility for clean-up, mitigation, etc. on the facility that is responsible for introducing a pollutant into the environment.

This makes NACWA's advocacy at the federal level critical.

5.4.2 Publicly Owned Treatment Works

To date, only one state has attempted to pass legislation to shield POTWs from liability for land application of biosolids that may contain PFAS.

In 2025, the Oklahoma Legislature considered SB 271 (titled Environment and natural resources; creating the Oklahoma Perfluoroalkyl and Polyfluoroalkyl Substances Act providing application, liability, and fee assessment for certain waste disposal. Emergency.) The bill did not pass. However, as introduced, it would have codified new law to protect passive receivers of PFAS "that provide essential services" from civil liability to the state for costs associated with a PFAS release to the environment. Included in the list of passive receivers, private and public treatment works "or the owner of a site where biosolids generated from a treatment works or a permitted municipal wastewater lagoon…are applied." Also included, the protections also extended to a contractor managing or disposing of materials on behalf of a wastewater treatment plant. The exemption

would not apply if the PFAS release was because of a violation of applicable law associated with the management, transport, conveyance, treatment, discharge and disposal of PFAS or commonly accepted engineering standards in place at the time. In addition, the exemption would not protect a passive receiver who acted with gross negligence or willful misconduct.[20]

5.4.3 Land Application Contractors

Contractors would also be protected under federal H.R 1267, discussed in Section 5.4 above. H.R. 1267 defines protected entity as including a contractor performing management or disposal activities for any of the entities defined in the bill (including POTWs).

5.4.4 Landowners

Massachusetts has proposed legislation providing liability protection to farmers.[21] Specifically, H 109 and S 56 seek to establish immunity from suit and civil liability "for any damages resulting from claims based on harms caused by PFAS present in soil, water or agricultural products as a result of standard agricultural practices." The bill would also establish an Agricultural PFAS Relief Fund, to be used to help the state's farmers that have suffered losses or incurred costs resulting from standard practices that may have resulted in PFAS in their soil, water, or agricultural products. The bill is still pending.

KEY TAKEAWAYS

- POTWs of this Guide should support NACWA's efforts to pass federal legislation to protect POTWs from CERCLA hability.
- Although few states have moved forward yet with protective legislation, POTWs should consider taking affirmative steps to introduce the concept of Polluter Pays and liability protection in their states.

States to look at:
Massachusetts, Oklahoma

[1] https://www.michigan.gov/pfasresponse.
[2] https://www.michigan.gov/pfasresponse/workgroups/land-application.
[3] PFAS Fund Advisory Committee: Help for Farmers: Maine DACF.
[4] VA Code § 62.1-44.34:33 (PFAS Expert Advisory Committee; report).
[5] H 109 / S 56 (2025).
[6] H 425 (2025).
[7] WI DNR, State of Wisconsin Clean Water Fund Program Intended Use Pan for the SFY 2026 Funding Cycle.
[8] Id.
[9] Id. Excluded costs include operation and maintenance (hauling and landfill tipping fees) and WPDES permit biosolids sampling. Id.
[10] Id.
[11] MI EGLE, EGLE announces $10.8 million in MI Clean Water grants to help communities upgrade water infrastructure, protect health & environment (Nov. 14, 2023). The project was a federally funded ARPA grant. Id.
[12] SB 20-218 (2020).
[13] Id.
[14] ME DACE, Fund to Address PFAS Contamination.
[15] Id.
[16] ME DACE, PFAS Fund: Research and Grant Opportunities.
[17] Id.
[18] Id.
[19] HR 1267 (2025-2026).
[20] SB 271 (2025).
[21] H 109 / S 56 (2025).

6. Biosolids PFAS Legislative Template

1. As soon as possible but no later than six months after the effective date of this section, the State Agency shall publish guidance on PFAS chemical monitoring for facilities generating biosolids that are land applied in the State.

   [NOTE: This 6-month window provides an opportunity for the State Agency to address any details of the required monitoring.]

2. Facilities generating biosolids that are land applied shall sample biosolids in accordance with the State Agency's guidance and have the samples analyzed for PFAS chemicals by an accredited laboratory for PFAS chemicals using the United States Environmental Protection Agency's Method 1633A (December 2024) or any revised or alternative method approved by the State Agency.

   [NOTE: The assumption here is that for expediency a standard monitoring program will be directly required by statute without permit modification. Reference to Method 1633A effectively defines the scope of required monitoring as the 40 analytes covered by the method at this time.]

3. Such sampling and testing shall be performed quarterly starting no later than 12 months after the effective date of this section and ending 36 months after the effective date of this section.

   [NOTE: This 12-month start date provides a short opportunity for owners of affected facilities to make all necessary arrangements for the new monitoring requirements such as budgeting; laboratory selection, procurement, and contracting; and training for clean sample collection for testing that is highly susceptible to contamination.]

4. Facilities that are required to sample and test biosolids for PFAS chemicals under this section must report all test results to the State Agency within three months following the last sampling event.

   [NOTE: Alternatively, reporting could be performed quarterly as test results are received throughout the duration of the monitoring program.]

5. Within six months after the end of the required quarterly monitoring, the State Agency shall submit a report to the appropriate committees of the legislature with a summary of the analysis of the levels of PFAS chemicals in biosolids land applied in the State and recommendations on how to proceed based on such analysis. The recommendations on how to proceed shall include consideration of:

   a. a recommended numeric threshold for defining industrially-impacted biosolids;

   b. recommended elements of a source control program for tracking down and minimizing PFAS discharges into sewer systems that result in industrially-impacted biosolids;

   c. a recommended risk-based approach to managing industrially-impacted biosolids until such time as PFAS discharges to the associated sewer system are

sufficiently minimized;

d. the availability or development of landfill capacity for diversion of industrially-impacted biosolids;

e. the availability or development of PFAS destruction facilities for industrially-impacted biosolids or industrial waste streams that are currently discharged to sewer systems and contributing to the classification of biosolids as industrially-impacted; and

f. the environmental impacts of alternatives to land application, including those associated with transportation, energy consumption, and carbon emissions.

6. *[OPTIONAL]* In developing its recommendations, the State Agency shall consult with a biosolids PFAS expert advisory committee. Members of the committee shall be appointed by the State Agency Director and shall include representatives of publicly owned treatment works, potential PFAS source categories, and other organizations with expertise in municipal wastewater management including pretreatment, biosolids management (including recycling, treatment, and disposal options), and other technical experts as determined by the State Agency.

[NOTE: This concept is limited to "experts" to promote an engineering and science-based approach to the advisory committee process for developing programmatic recommendations as opposed to the policy based discussions that are likely to follow in a subsequent legislative session or rulemaking process.]

7. *[OPTIONAL IF NEEDED]* The following interim thresholds shall restrict biosolids land application based on the running annual average concentration data from the required monitoring program and long-term policy development process established by this section.

a. PFOS or PFOA is 100 µg/kg or above: This material shall be deemed industrially impacted. The facility shall promptly arrange for alternative treatment or disposal of the biosolids, discontinue land application, and implement a source reduction program.

b. PFOS or PFOA is at or above 50 µg/kg, but less than 100 µg/kg: The facility may continue land application at the reduced rate of 3 dry tons per acre, provided the facility implements a source reduction program.

c. PFOS and PFOA are below 50 µg/kg: The facility may continue land application, provided the facility implements a source reduction program.

d. PFOS and PFOA are below 20 µg/kg: The facility may land apply with no additional requirements.

[NOTE: Note the use of "or" and "and" in the applicability of the various tiers. Of course, the numeric thresholds and any reduced land application rates could be set at different levels (as they are in the existing State examples.]

8. For the purposes of this section:

a. "Biosolids" means a sewage sludge that has received an established treatment and is managed in a manner to meet required pathogen control and vector attraction reduction, and contains concentrations of regulated pollutants below the ceiling limits established in 40 CFR Part 503, such that it meets the standards established for use of biosolids for land application, marketing, or distribution. "Biosolids" does not include septic tank sludge, also known as septage.

b. “Domestic sewage” is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

c. “Facility generating biosolids” means a treatment works, whether federally owned, publicly owned, or privately owned, that is used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature. This term does mean an industrial or commercial facility treating its industrial wastewater alone or in combination with domestic sewage.

d. “Industrial wastewater” is wastewater generated in a commercial or industrial process.

e. “Land application” or “land applied” means the spraying or spreading of a bulk material derived from sewage sludge on the land, injecting such material below the surface of the land, or incorporating such material into the soil for the purpose of fertilizing crops or vegetation or conditioning the soil. This term does not include the bulk disposal of sewage sludge in a confined area such as a landfill or the distribution and use of material derived from sewage sludge that is sold or given away as a bagged or similarly contained product.

f. “Sewage sludge” means a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

[NOTE: These definitions address common applicability issues by excluding septage, consumer use of bagged biosolids products, and industrial sludge, thereby focusing on bulk land application of biosolids. In some settings, it may be desirable, however, to revise the overall scope to include similar sampling, testing, and management requirements for industrial sludges of interest.

7. State Index