



PFAS Challenges in Focus: Drinking Water, Surface Water, Wastewater, and Biosolids

PLUMMER

Meg Pierce-Walsh, Environmental Services Practice Leader



November 19, 2025

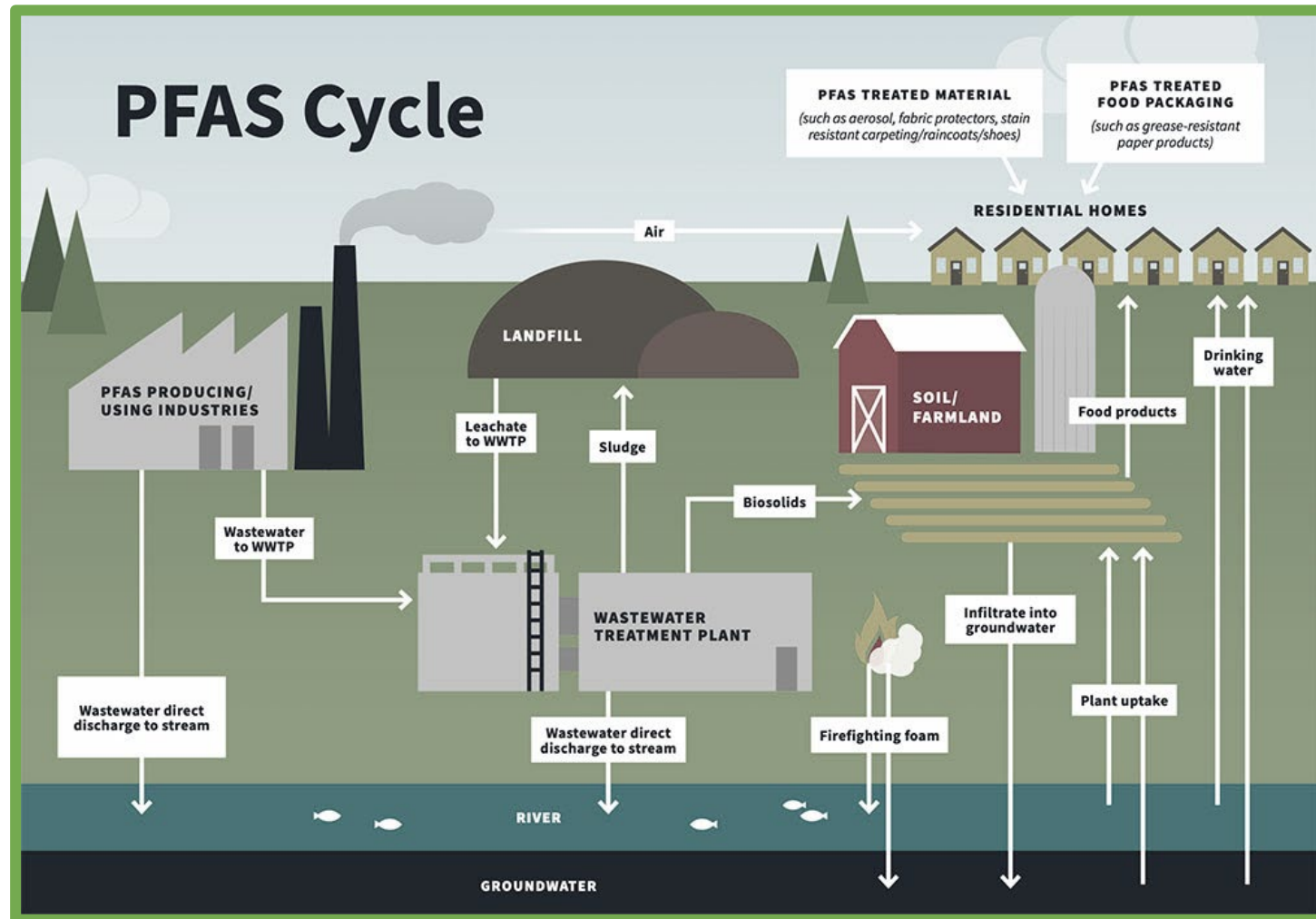
PFAS are Commonly Used Synthetic Chemicals

- Per- and polyfluoroalkyl substances (PFAS), known as “forever chemicals”, are synthetic chemicals that do not occur naturally.
- Used in a wide variety of products.
- There are thousands – only a fraction are analysed



<https://www.epa.gov/trinationalanalysis/pfas>

Preparing for PFAS regulations requires us to see the circular nature of PFAS in the environment.



A decorative graphic on the left side of the slide, consisting of three light green circles arranged in a triangle, connected by curved lines that form a partial circular path.

Focus on Drinking Water, Surface Water, and Wastewater

Drinking water rules face potential changes.

Compound	Final MCLG	Final MCL (enforceable levels) ¹
PFOA	Zero	4.0 parts per trillion (ppt) (also expressed as ng/L)
PFOS	Zero	4.0 ppt
PFHxS	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
HFPO-DA (commonly known as GenX Chemicals)	10 ppt	10 ppt
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index	1 (unitless) Hazard Index

EPA Recommended Criteria provide uncertainty into future potential surface and wastewater regulatory environment.

Table 1. Draft Human Health Criteria (HHC) for Three PFAS.

PFAS	Water + Organism HHC (ng/L; ppt) ¹	Organism Only HHC (ng/L; ppt) ¹
PFOA	0.0009	0.0036
PFOS	0.06	0.07
PFBS	400	500

¹ Values are provided in ng/L units to aid in comparison to method detection limit (MDL).

Table 1. Final Recommended Freshwater Aquatic Life Water Quality Criteria for PFOA and PFOS

Criteria Component	Acute Water Column (CMC) ¹ (mg/L)	Chronic Water Column (CCC) ² (mg/L)	Invertebrate Whole-Body (mg/kg ww ³)	Fish Whole-Body (mg/kg ww ³)	Fish Muscle (mg/kg ww ³)
PFOA Magnitude	3.1	0.10	1.18	6.49	0.133
PFOS Magnitude	0.071	0.00025	0.028	0.201	0.087
Duration	1-hour average	4-day average	Instantaneous	Instantaneous	Instantaneous
Frequency	Not to be exceeded more than once in three years, on average	Not to be exceeded more than once in three years, on average	Not to be exceeded	Not to be exceeded	Not to be exceeded

¹ Criterion Maximum Concentration.

² Criterion Continuous Concentration.

³ Wet Weight.

Michigan is a leader in monitoring and source reduction for industrial users and wastewater.



One of the most robust PFAS datasets in the U.S. provides insight into PFAS levels in wastewater.

Further Evaluation of Per- and Polyfluoroalkyl Substances (PFAS) from Wastewater Treatment Plant Influent, Effluent, and Residuals in Michigan

August 2025

Michigan Environment, Great Lakes, and Energy (EGLE), 2021. *Evaluation of PFAS in influent, effluent, and residuals of wastewater treatment plants in Michigan.*

- 2025. *Further Evaluation of Per- and Polyfluoroalkyl Substances (PFAS) from Wastewater Treatment Plant Influent, Effluent, and Residuals in Michigan.*

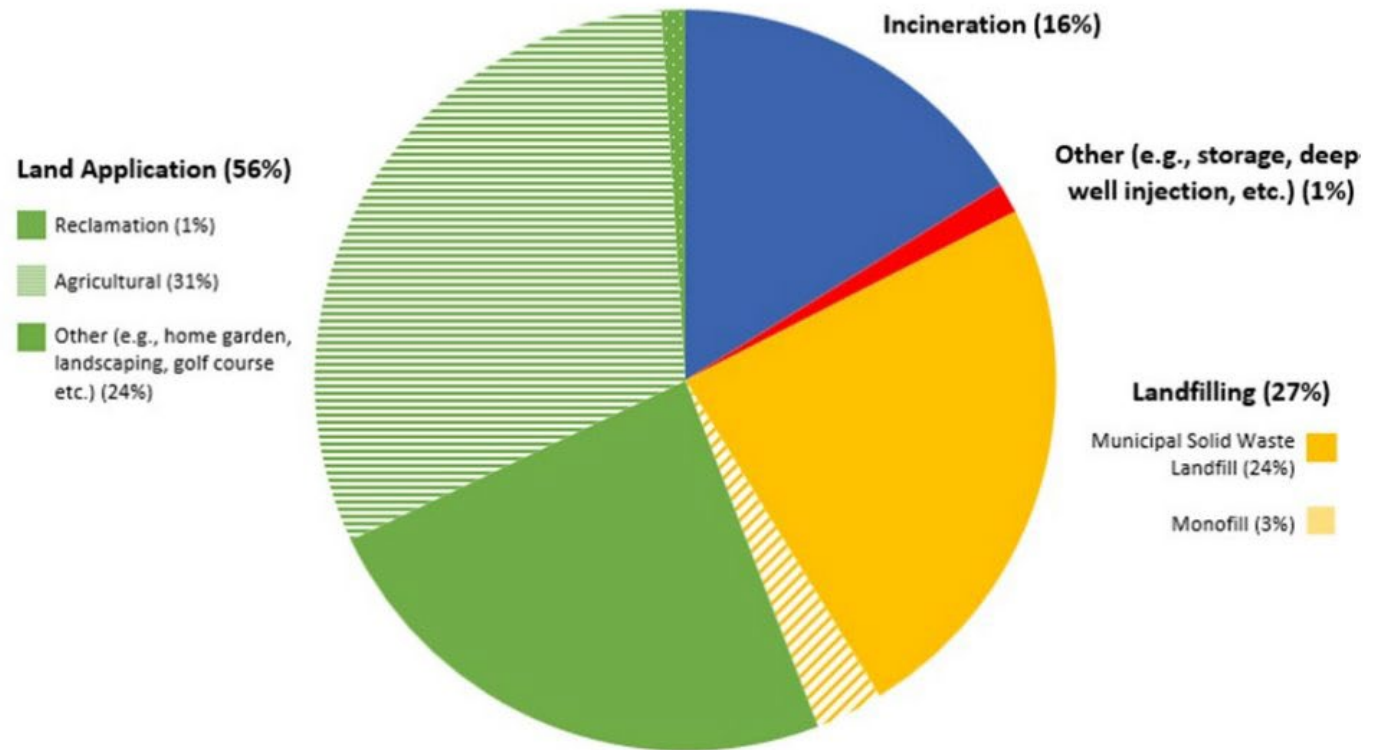
A decorative graphic on the left side of the slide, consisting of three light green circles arranged in a triangle. Two arcs connect the top circle to the bottom-left and bottom-right circles, and a third arc connects the bottom-left and bottom-right circles, forming a partial frame around the text.

Focus on Biosolids

Biosolids only have so many disposal and use options.

Land applying biosolids has many benefits beyond its application as a disposal option, such as improving soil health and serving as fertilizer.

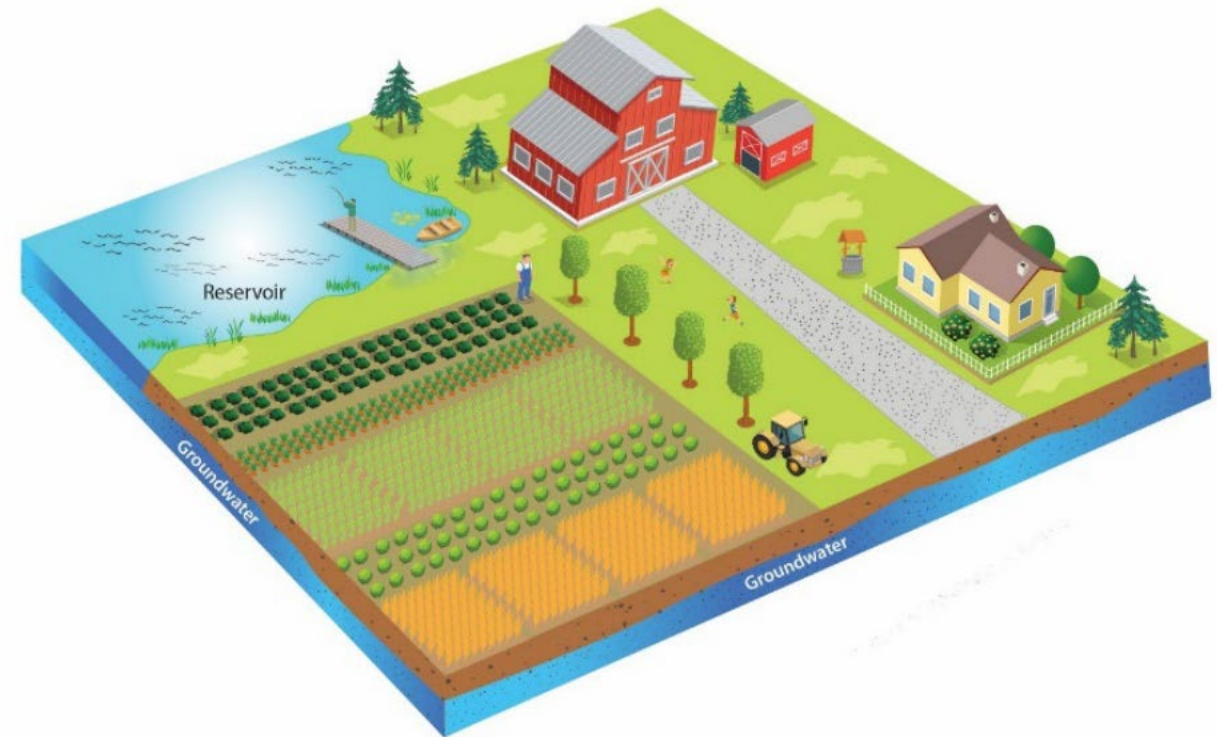
Biosolids Use & Disposal from 2022 Biosolids Annual Reports





Draft EPA Biosolids Risk Assessment

- The EPA **Draft** Risk Assessment is **guidance** that applies to people living and subsisting on farms with biosolids application.
- Raises uncertainty about biosolids and recommended disposal option(s).



During recent Texas legislative sessions, PFAS biosolids-related bills have been introduced, but none have passed.

HB1674

SECTION 3. Subchapter F, Chapter 63, Agriculture Code is amended by adding Section 63.096 to read as follows:

Sec. 63.096. PROVISIONS RELATED TO PRODUCTS CONTAINING PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES. (a) Except as otherwise provided in this Chapter, a person may not manufacture, sell, distribute, or apply any material described by Section 63.002(a)(5) with a concentration of perfluoroalkyl and polyfluoroalkyl substances above the following levels:

- (1) Perfluorobutyric acid - 28,800 parts per trillion;
- (2) Perfluorobutane sulfonate - 40,300 parts per trillion;
- (3) Perfluoropentanoic acid - 14,400 parts per trillion;
- (4) Perfluorohexane sulfonate - 300 parts per trillion;
- (5) Perfluorohexanoic acid - 9,400 parts per trillion;
- (6) Perfluoroheptanoic acid - 400 parts per trillion;
- (7) Perfluorooctanoic sultanate - 5,100 parts per trillion;
- (8) Perfluorooctanoic acid - 900 parts per trillion;
- (9) Perfluorooctane sulfonamide - 2,700 parts per trillion;
- (10) Perfluorononanoic acid - 1,500 parts per trillion;
- (11) Perfluorodecanoic acid - 800 parts per trillion;
- (12) Perfluorodecane sulfonate - 800 parts per trillion;
- (13) Perfluoroundecanoic acid - 800 parts per trillion;
- (14) Perfluorododecanoic acid - 800 parts per trillion;

HB160

Person
H.B. No. 160

A BILL TO BE ENTITLED
AN ACT
relating to a prohibition of the application of biosolids to certain land.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

SECTION 1. The heading to Section 361.121, Health and Safety Code, is amended to read as follows:

Sec. 361.121. ~~LAND~~ APPLICATION TO NON-AGRICULTURAL LAND OF CERTAIN SLUDGE; PERMIT REQUIRED.

SECTION 2. Section 361.121(a)(2), Health and Safety Code, is amended to read as follows:

(2) "Land application unit" means an area where wastes are applied onto or incorporated into the soil surface for non-agricultural ~~agricultural~~ purposes, including ~~or for~~ treatment and disposal or maintaining public parks, golf courses, and athletic fields. The term does not include manure spreading operations.

SECTION 3. Section 361.121(d), Health and Safety Code, is amended to read as follows.



Focus on Progress and Solutions

The future is certainly uncertain – So, what can we do now?



Understand data



Reduce sources



Collaborate with industry groups



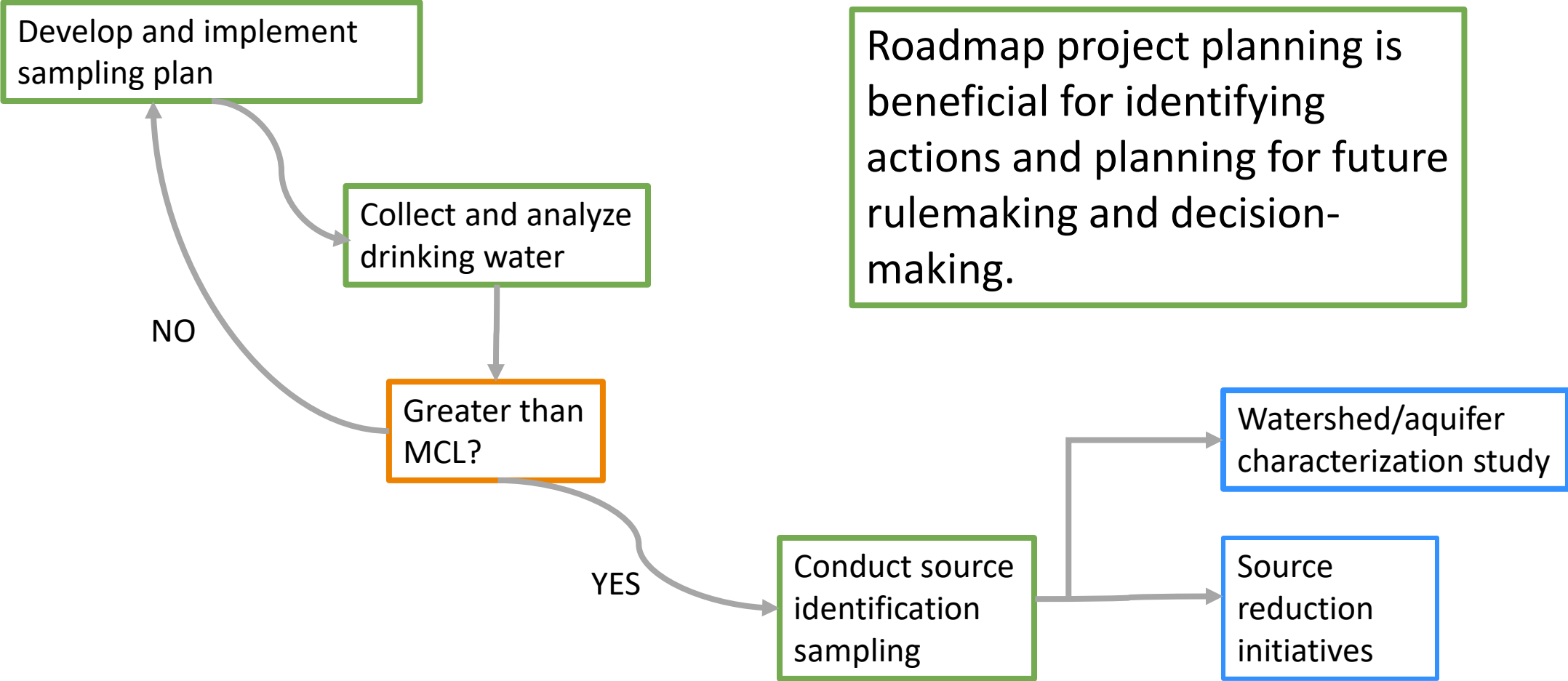
Understand future options

Source identification and reduction studies can help answer your utility's PFAS questions.

- Surveying industrial and commercial users
- Sampling potential sources
- Identifying potential reductions
- Incentivizing reductions



Planning a roadmap for your utility can help you understand where you are headed.



The PFAS funnel

