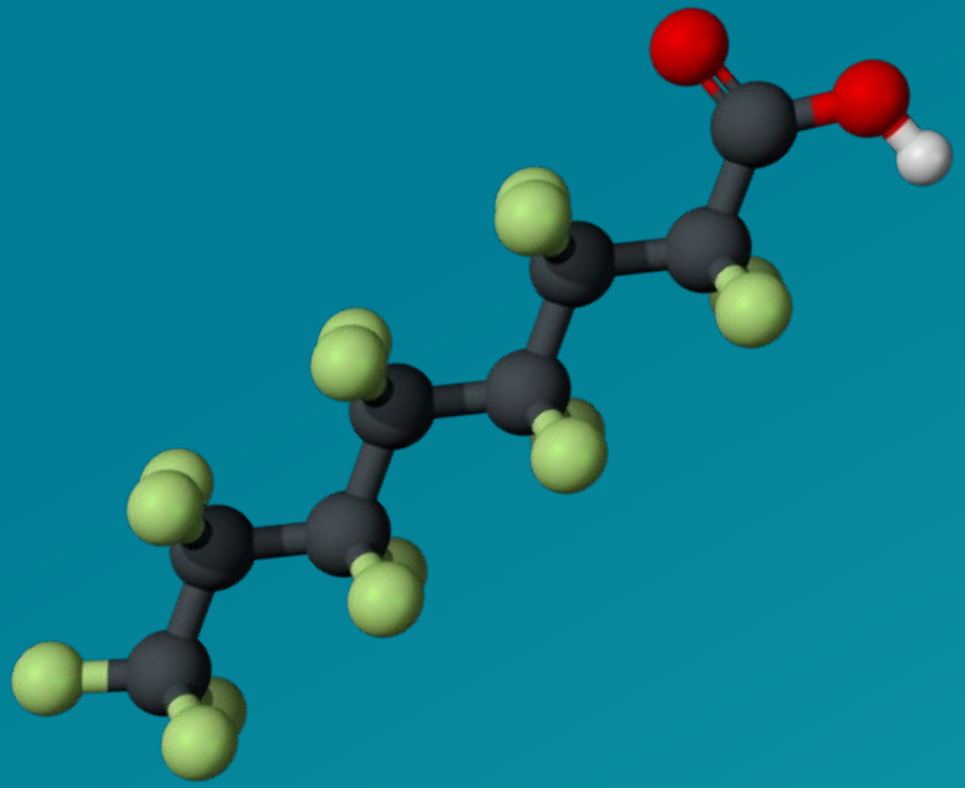
Addressing PFAS pollution in Minnesota: An Overview

Watershed Connections | February 9, 2026

MINNESOTA POLLUTION CONTROL AGENCY

- **The problems with PFAS**
- **History**: First understanding of PFAS pollution
- **Strategic response**: Minnesota's PFAS Blueprint
- **Prioritizing PFAS pollution prevention**: Prohibitions and Amara's Law
- **Water**: Risk-based values for waters in Minnesota
- **Looking ahead**: What can you do to help?

What are PFAS?



Per- and polyfluoroalkyl substances

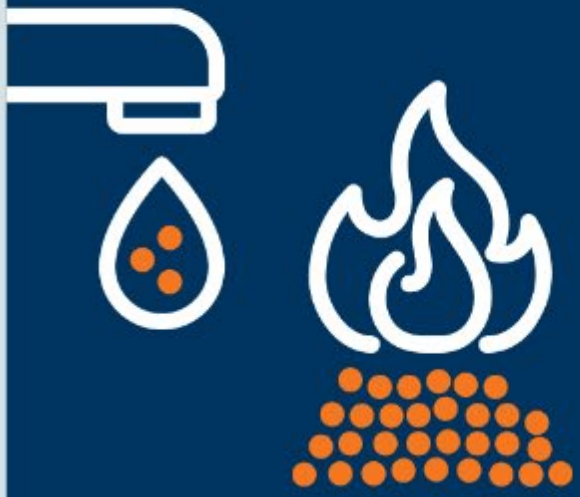
- “Forever chemicals”
- Chains of carbon-fluorine bonds
- Diverse class of compounds

The problem with PFAS chemicals

Small amounts may be harmful.

Some build up in people over time.

All are difficult to remove and destroy.



PFAS cleanup is expensive

Cost to buy PFAS
to make consumer products

$50 - $1000
per pound

Cost to remove and destroy PFAS
from municipal wastewater

$2.7 million - $18 million
per pound

Health effects and exposure routes

Health effects

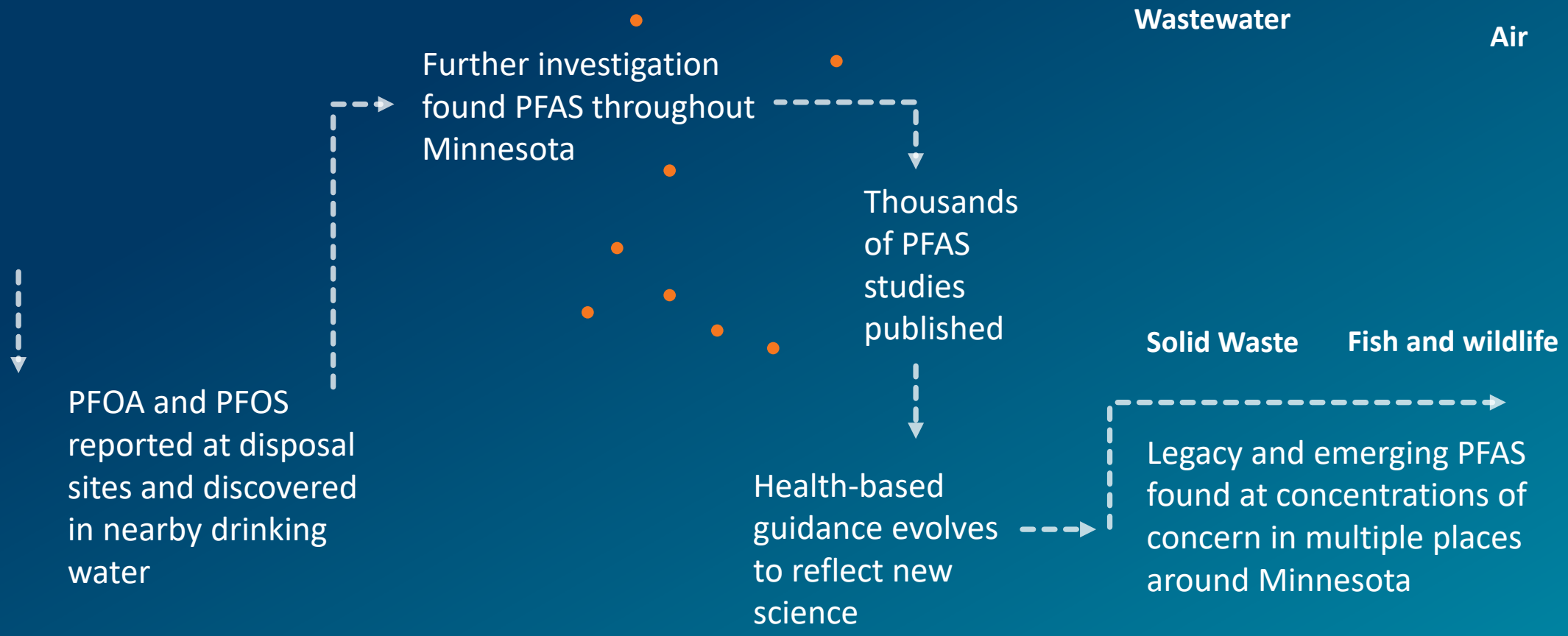
- Immune suppression
- Developmental effects
- Reproductive effects

Exposure routes

- Drinking water, fish consumption, other food consumption, breastmilk or formula, air, dermal…
- Different PFAS chemicals are associated with different exposure routes




Minnesota's history with PFAS pollution



Statewide strategic response

Minnesota's PFAS Blueprint supports a holistic and systematic approach to address PFAS.

Minnesota's PFAS Blueprint: Ten topic areas

Preventing PFAS pollution

Measuring PFAS effectively and consistently

Quantifying PFAS risks to human health

Limiting PFAS exposure from drinking water

Ensuring safe consumption of fish and game

Limiting PFAS exposure from food

Understanding risks from PFAS air emissions

Protecting ecosystem health

Remediating PFAS contaminated sites

Managing PFAS in waste

PFAS response actions

1

Prevent
PFAS pollution wherever possible

2

Manage
PFAS pollution when prevention is not feasible, or pollution has already occurred

3

Clean up
PFAS pollution at contaminated sites

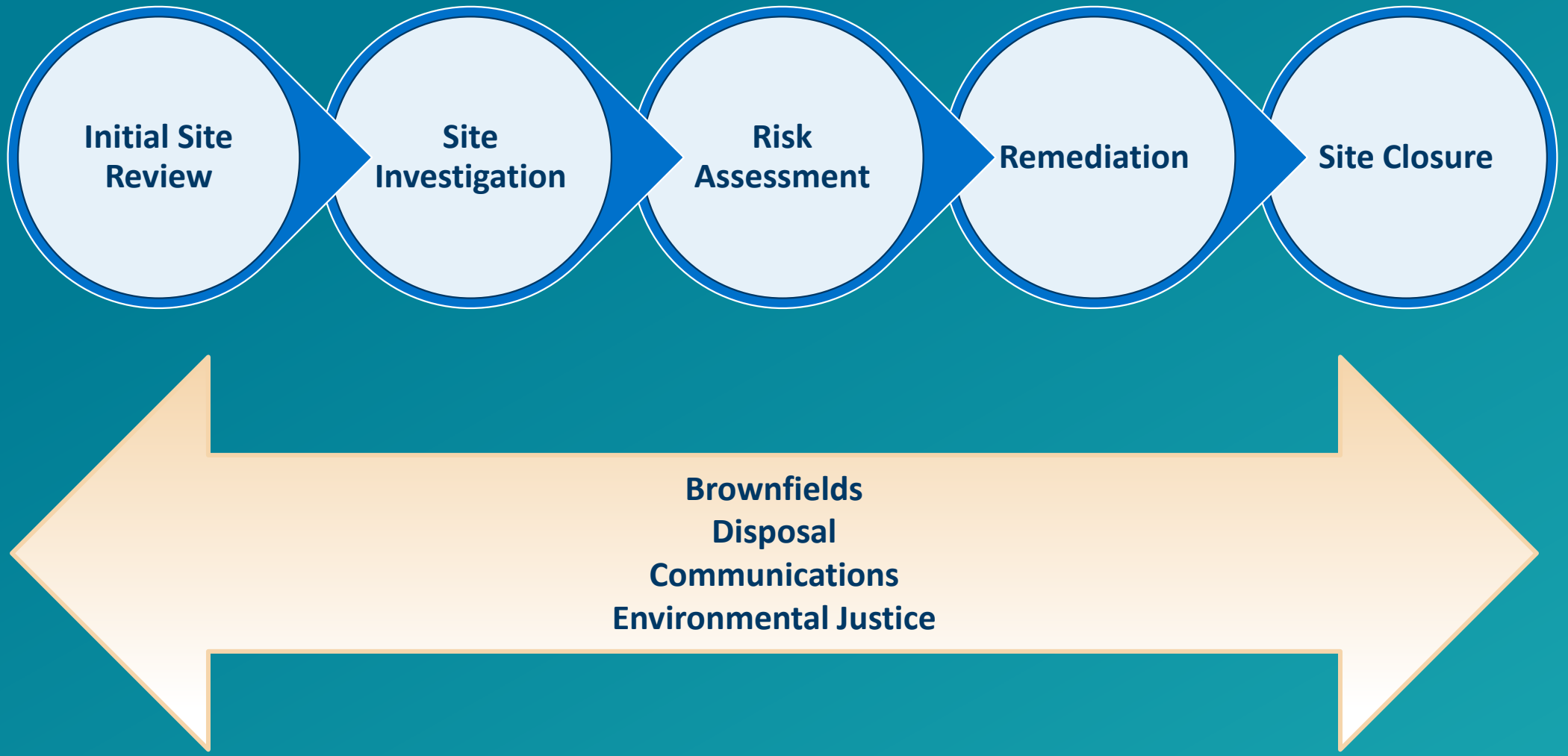
PFAS cleanup: Remediation Guidance

Directions for investigation & remediation of PFAS

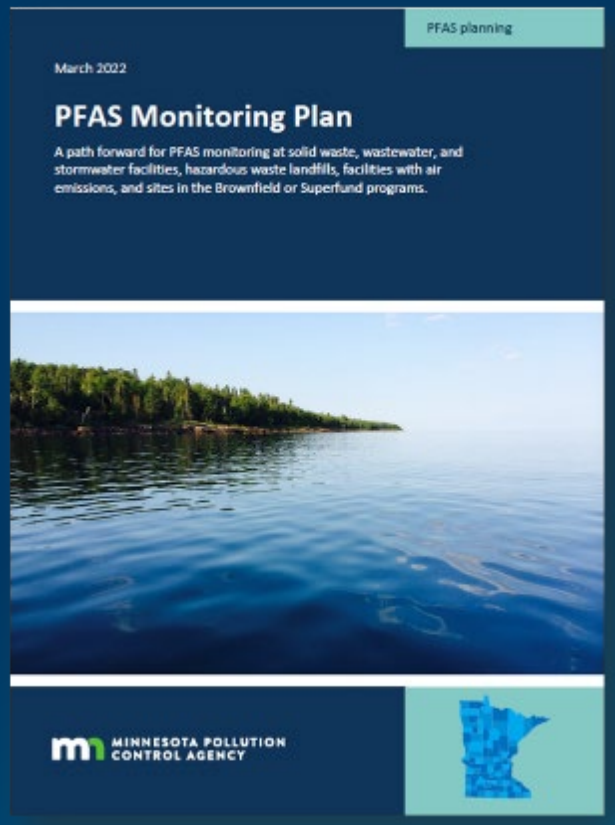
Stakeholder engagement & incorporation of emerging data

Alignment of state and federal designations

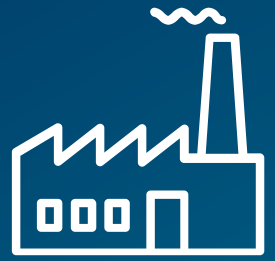
Guidance structure



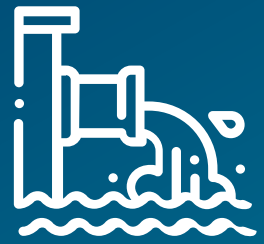
PFAS management: MPCA PFAS Monitoring Plan



Solid waste facilities

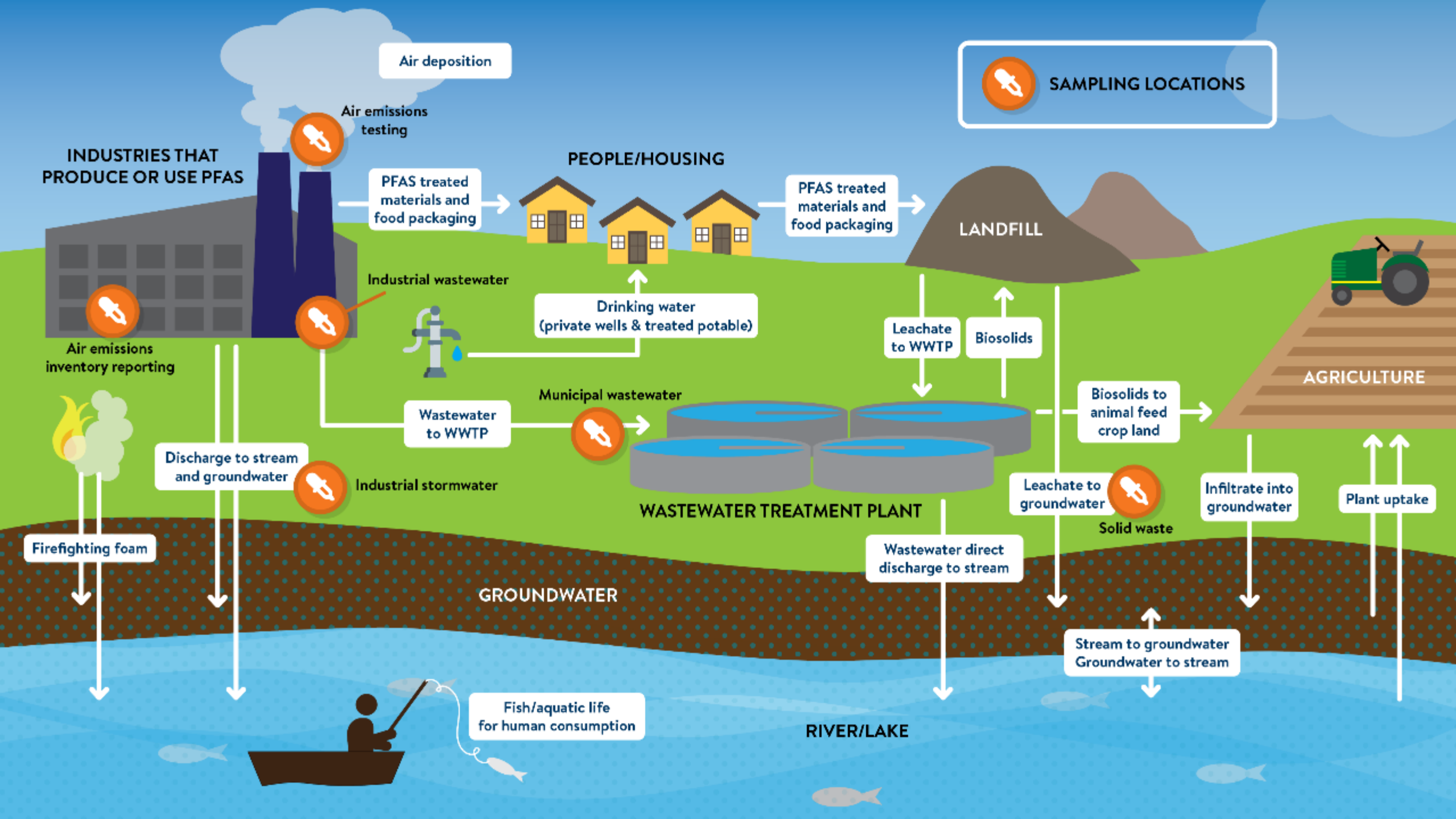


Industrial facilities



Municipal wastewater treatment plants

Regional airports in Greater Minnesota


SAMPLING LOCATIONS
Air deposition
Air emissions testing
INDUSTRIES THAT PRODUCE OR USE PFAS
PFAS treated materials and food packaging
PEOPLE/HOUSING
PFAS treated materials and food packaging
LANDFILL
Industrial wastewater
Drinking water (private wells & treated potable)
Leachate to WWTP
Biosolids
Air emissions inventory reporting
AGRICULTURE
Municipal wastewater
Wastewater to WWTP
Biosolids to animal feed crop land
Discharge to stream and groundwater
Industrial stormwater
Leachate to groundwater
Infiltrate into groundwater
Plant uptake
WASTEWATER TREATMENT PLANT
Solid waste
Firefighting foam
Wastewater direct discharge to stream
GROUNDWATER
Stream to groundwater
Groundwater to stream
Fish/aquatic life for human consumption
RIVER/LAKE

Monitoring outcomes

Key results

- Certain industry sectors in MN are of particular concern for PFAS release
- PFAS were found at all airports, WWTPs, and currently or historically unlined landfills
- Quality PFAS data collection is challenging in some media, like industrial wastewater

Next steps

- Source reduction and management plans
- Targeted investigations at sites with drinking water risks
- Evaluation of remaining data
- Development of permitting strategies across media

Prioritizing PFAS prevention

- The most effective way to protect human health, the environment, and the economy
- Precedent from other pollutants
- Laws passed in 2023 make Minnesota a national leader

Risk-based values for PFAS in groundwater

Minnesota Department of Health: Health-Based Values (HBVs) for PFAS in drinking water (January 2024)

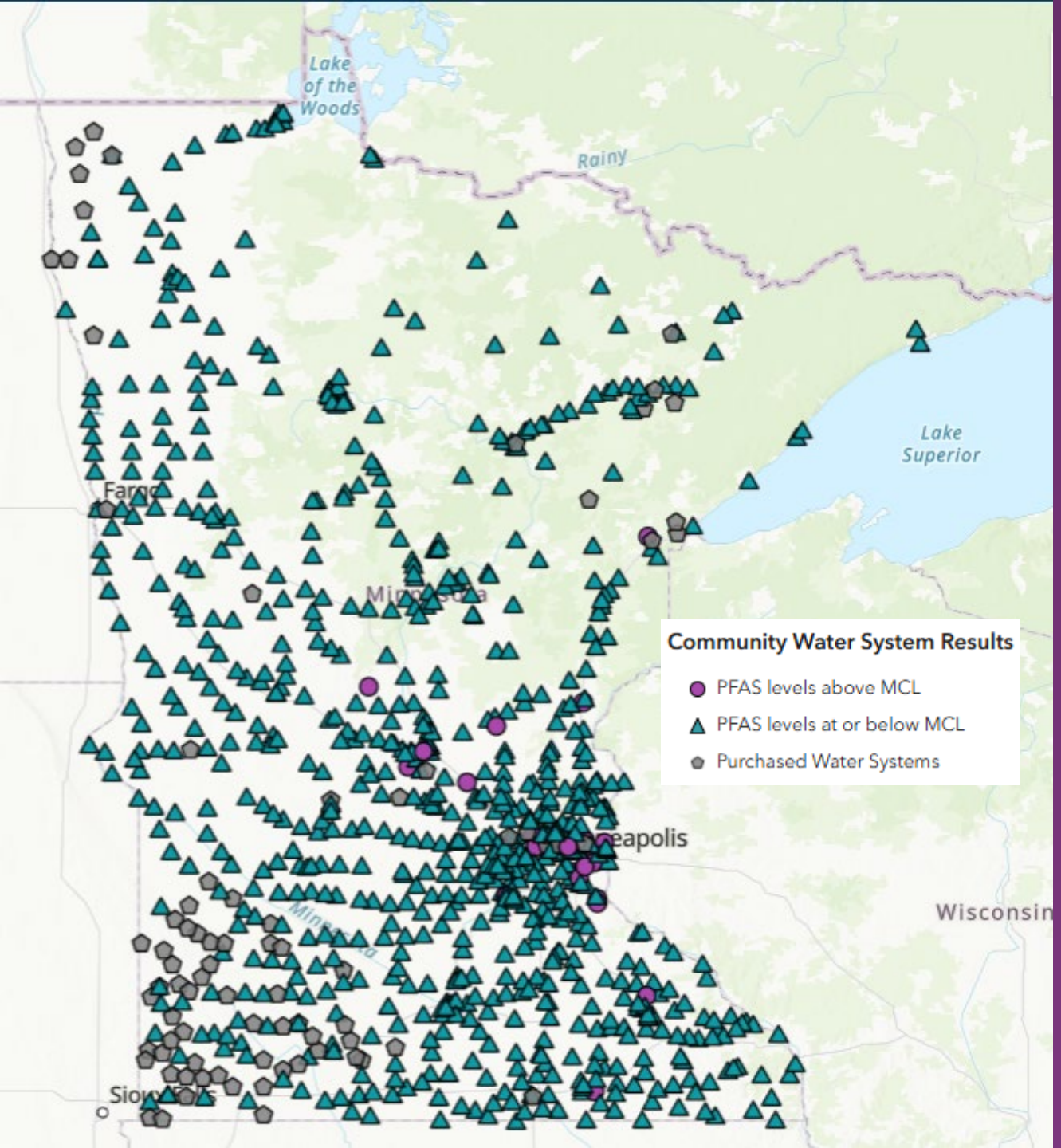
Year	PFOA	PFOS	PFHxS	PFHxA	PFBA	PFBS
2002	7	7	n/a	n/a	n/a	n/a
2006	1	0.6			1	
2007	0.5	0.3			**7 ***	
2009	0.3					7
2013			0.3			
2016	0.07	0.07	0.07			
2017	0.035	0.027	0.027			2
2019		0.015	**0.047 ***	**0.2 ***		
2022						**0.1 ***
2024	**0.0000079 ***	**0.0023 ***				

Table adapted from the Minnesota Department of Health website, "PFAS and Health". All values shown in parts per billion (ppb). * denote HBVs that have been formalized as Health Risk Limits per Minn. R. Ch. 4717.7860.

EPA Maximum Contaminant Levels (MCLs) for PFAS in drinking water (as of June 2024)

	Final MCLG (health-based, not enforceable)	Final MCL (enforceable)
PFOA	0	**0.004**
PFOS	0	**0.004**
PFNA	0.01	**0.01**
PFHxS	0.01	**0.01**
PFBS	n/a	**n/a**
HFPO-DA (GenX)	0.01	**0.01**
Mixtures containing two or more of PFNA, PFHxS, PFBS, and/or HFPO-DA	1.0 (unitless) Hazard Index	**1.0 (unitless) Hazard Index**

Table adapted from the EPA website, "Per- and Polyfluoroalkyl Substances (PFAS): Final PFAS National Primary Drinking Water Regulation". All values shown are in parts per billion (ppb) for comparison; EPA's final values are published in parts per trillion (ppt).



To date, over 98% of community water systems (CWS) have been tested for PFAS

- Exceedance at about 20 CWS (EPA MCLs)

Who pays?

- 3M Settlement (2018)
- Drinking Water (State) Revolving Fund
- Bonding
- Drinking water planning and design grant
- User fees

PFAS (surface) water quality standards

EPA MCLs for PFAS in drinking water (April 2024) = **Class 1 WQS (MN Rules Ch. 7050.0221)**

	Final MCLG (health-based, not enforceable)	Final MCL (enforceable)
PFOA	0	**0.004**
PFOS	0	**0.004**
PFNA	0.01	**0.01**
PFHxS	0.01	**0.01**
PFBS	n/a	**n/a**
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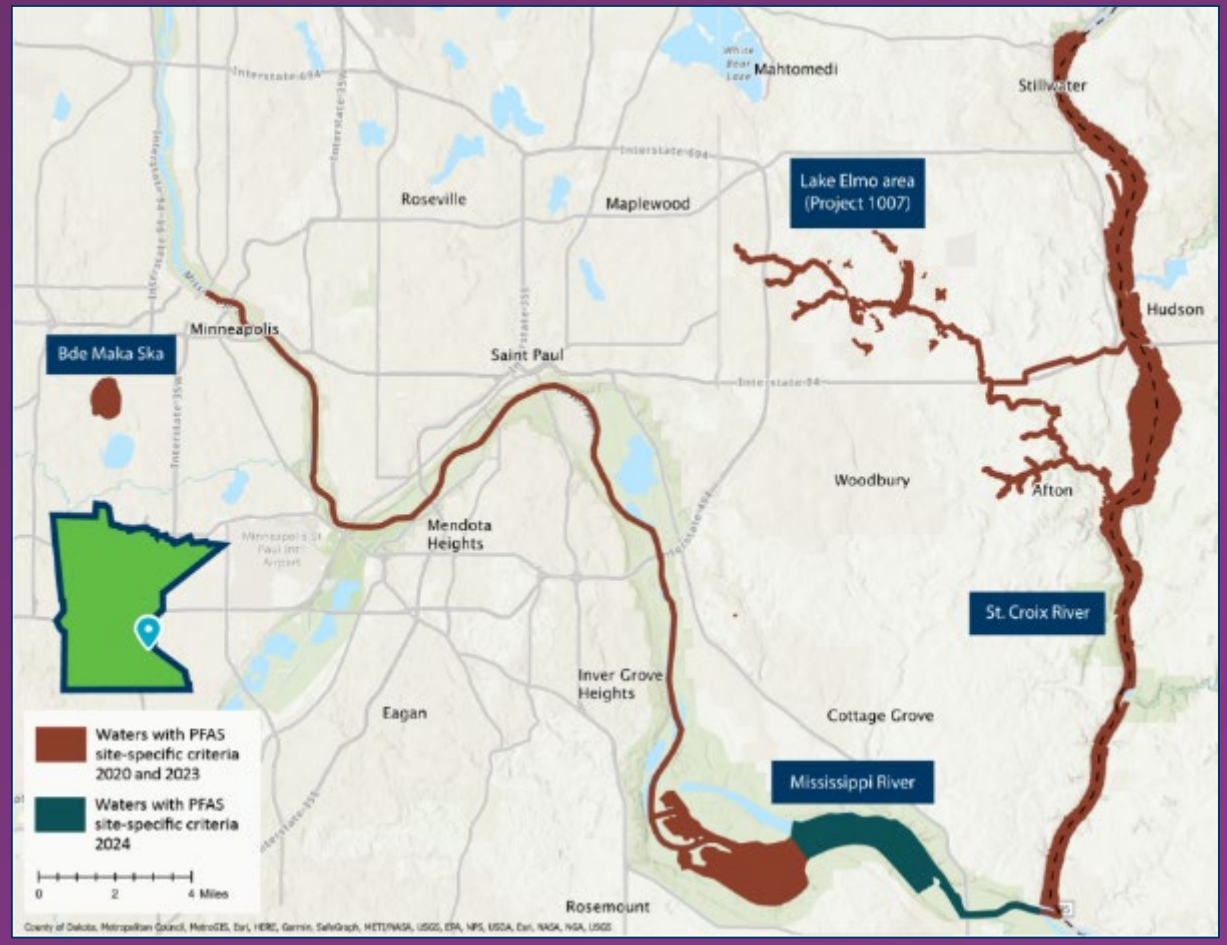
Surface waters with PFAS water quality (site-specific) criteria = **Class 2 WQS (MN Rules Ch. 7050.0222)**



PFAS in the CLFLWD

Water samples from Forest Lake, 2018

- PFBA (C4): 118 ng/L
- PFHxA (C6): 3.07 ng/L
- PFOA (C8): 9.9 ng/L
- PFPeA (C5): 2.31 ng/L

Fish Consumption Guidance

MDH develops fish consumption guidance based off fish tissue and/or water column data

Several area lakes have “do not eat” advisories for sensitive populations

Other lakes have recommendations to limit meals depending on species

DNR's LakeFinder (example 1)

How to use LakeFinder

Main page
LakeFinder search tips
Find a lake by map
Stocking reports user guide
Go to mobile site

Forest (82015900)

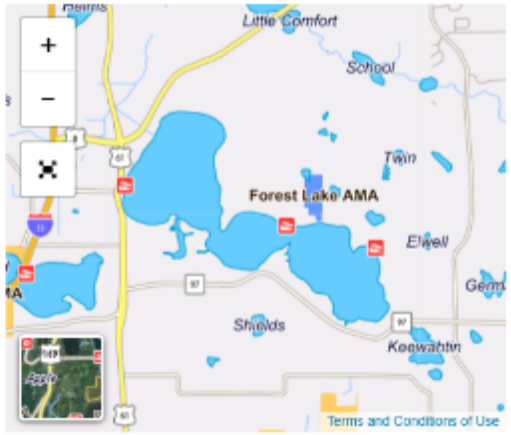
Fish consumption advisory
See the Fish Consumption guidance provided by the Minnesota Department of Health.

ID: 82015900
County: Washington
Near: Forest Lake
Border water: No
Sentinel Lake: No

Size and depth

Area: 2270.94 acres
Littoral Area: 1531 acres
Shore length: 15.71 miles
Maximum depth: 37 feet

Fish species: black bullhead,black crappie,bluegill,bowfin (dogfish),brown bullhead,common carp,green sunfish,hybrid sunfish,largemouth bass,muskellunge,northern pike,pumpkinseed,rock bass,walleye,white crappie,white sucker,yellow bullhead,yellow perch



Fish Consumption Guidelines

Minnesota Department of Health (MDH) Fish Consumption Guidelines help people make choices about which fish to eat and how often. Following the guidelines helps people reduce exposure to contaminants, while still enjoying the many benefits from fish.

FOREST (82015900)
Washington County

When eating fish from this lake, follow the Statewide Fish Consumption Guidelines - MN Dept. of Health.
Fish from this lake have been tested for contaminants.

LakeFinder (example 2)

How to use LakeFinder

Main page
LakeFinder search tips
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Elmo (82010600)

Fish consumption advisory
See the Fish Consumption guidance provided by the Minnesota Department of Health.

ID: 82010600
County: Washington
Near: Lake Elmo
Border water: No
Sentinel Lake: No

Size and depth

Area: 256.82 acres
Littoral Area: 44.5 acres
Shore length: 4.14 miles
Mean depth: 31 feet
Maximum depth: 140 feet

Fish species: black crappie,bluegill,green sunfish,hybrid sunfish,largemouth bass,northern pike,pumpkinseed,smallmouth bass muskellunge,tullibee (cisco),walleye, sucker,yellow perch

Fish Consumption Guidelines

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ELMO (82010600)
WASHINGTON County

Attention: Minnesota Department of Health has issued a Do Not Eat fish consumption advisory for this lake due to PFOS concentrations. The following link has more information: PFOS Information.

Prohibitions on PFAS in products

Amara's Law

July 1, 2020	January 1, 2024	January 1, 2025	July 1, 2026	January 1, 2032
Firefighting foam for testing or training	Food packaging and other uses of firefighting foam (with exceptions)	11 additional product categories	PFAS reporting is due	PFAS in nearly all other product categories, unless determined to be a "currently unavoidable use"

Prohibitions on PFAS in pesticide and other agricultural products

January 1, 2026	January 1, 2032
Registration, renewal, sale, and/or distribution of any product if the product contains intentionally added PFAS and falls under one of the 11 product categories under Amara's Law is prohibited. Annual reporting begins.	Registration, renewal, sale, and/or distribution of all products (pesticides, fertilizers, specialty fertilizers, soil and plant amendments, and agricultural liming products) prohibited unless the product is statutorily exempt, or the product meets the definition of "currently unavoidable use" by the MDA

What can you do to help?

Amplify MDH, MPCA, DNR messages

- Fish consumption guidance
- Amara's Law and other prohibitions
- Participate in conversations with local and state groups if opportunity arises

Raise concerns and ask questions

- Are you seeing (or hearing about) foam?
- What kinds of sources might be contributing to the municipal stormwater sewer system?
- What are you hearing from neighbors and/or visitors, if anything?

Questions?

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