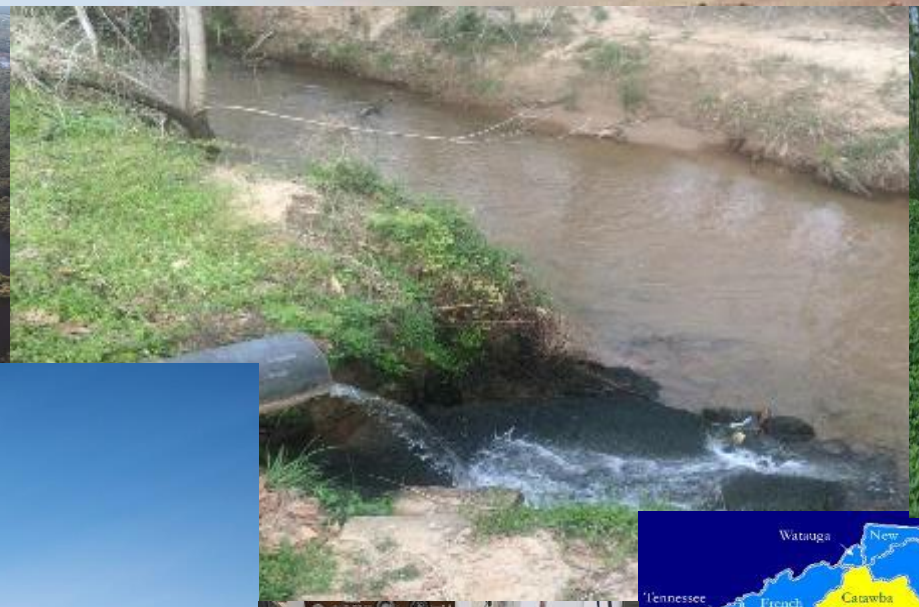
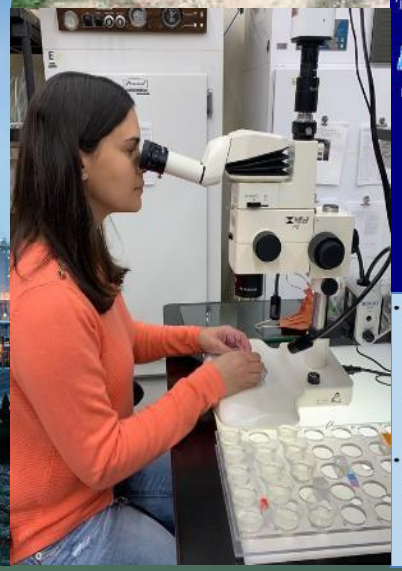
ESI Conference 2024

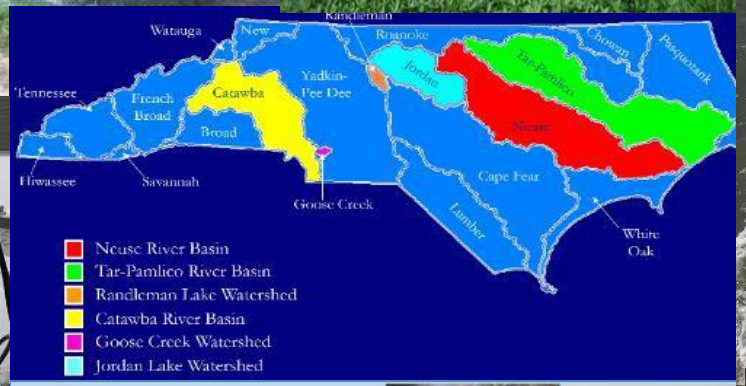
October 29, 2024

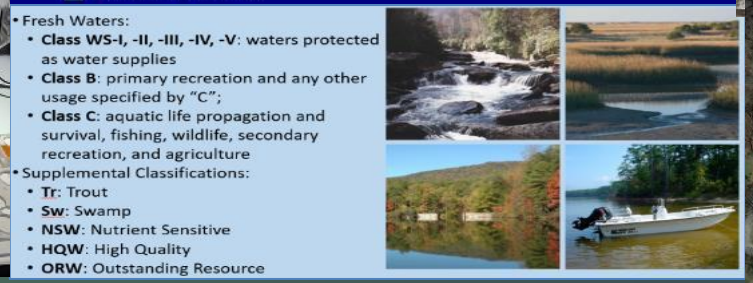
Division of Water Resources

DWR Overview









Update PFAS Action Strategy

Department of Environmental Quality

North Carolina DEQ Action Strategy for PFAS

DEQ is committed to protecting the residents of North Carolina by addressing the threat of PFAS contamination. NC DEQ is prioritizing the reporting of PFAS emissions or discharges to air, surface water, or groundwater, and working to identify the potential sources of PFAS impacting communities.

Investigation of biosolids is part of our potential source investigation and serves to expand the base of our scientific knowledge of PFAS in our state.

Types of North Carolina Water Quality Standards Federal and State Rules

Groundwater Standards
(protect resource)

State Regulations

Drinking Water Standards
(treatment)

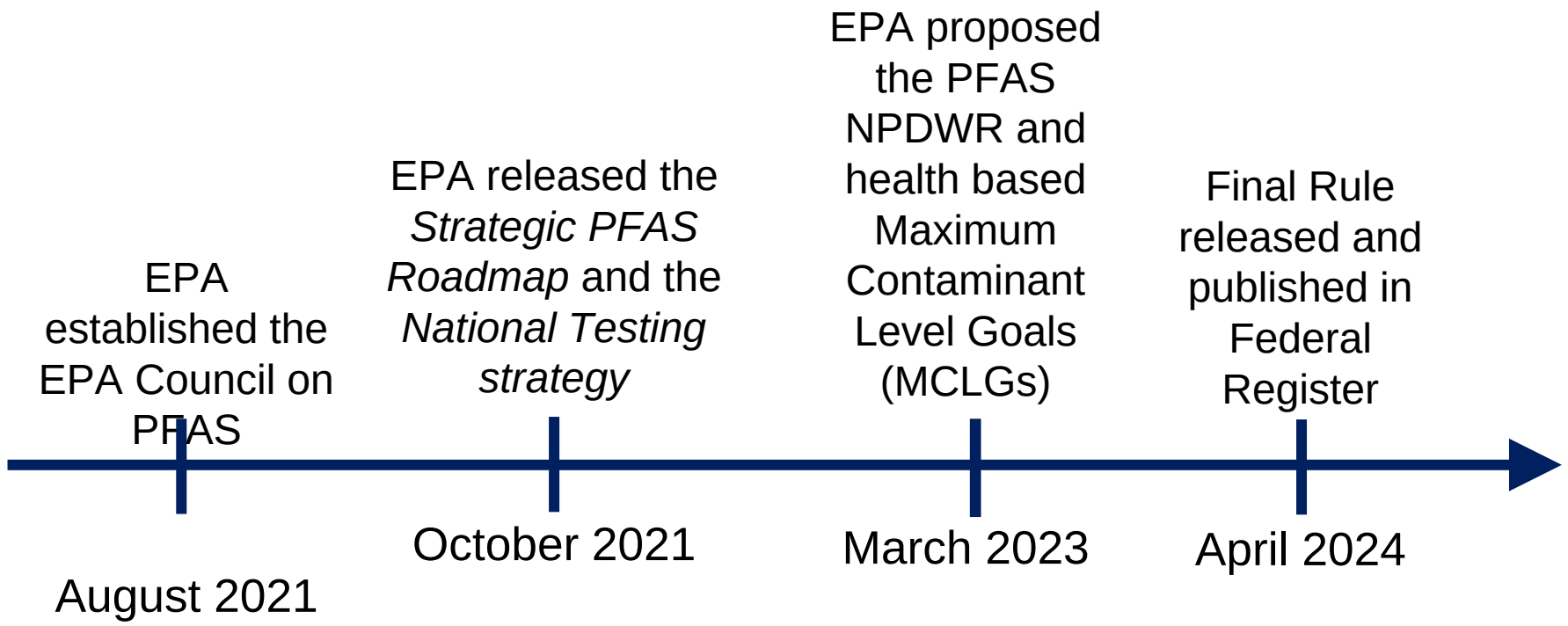
Safe Drinking Water Act

Surface Water Standards
(protect resource)

Clean Water Act

Drinking Water PFAS MCL

Final PFAS Rule Development



Department of Environmental Quality
Division of Water Resources

NC Public Drinking Water Systems Impacted by the PFAS Rule

All NC Community Water Systems (CWSs) and Non-Transient Non-Community Water Systems (NTNCWSs) with their own source will be affected by the new PFAS rule.

Category	Number of Systems
Total Number of Water Systems Affected	1,961
CWSs	1,651
NTNCWSs	310
Groundwater (GW) Systems	1,790
Surface Water (SW) Systems*	171

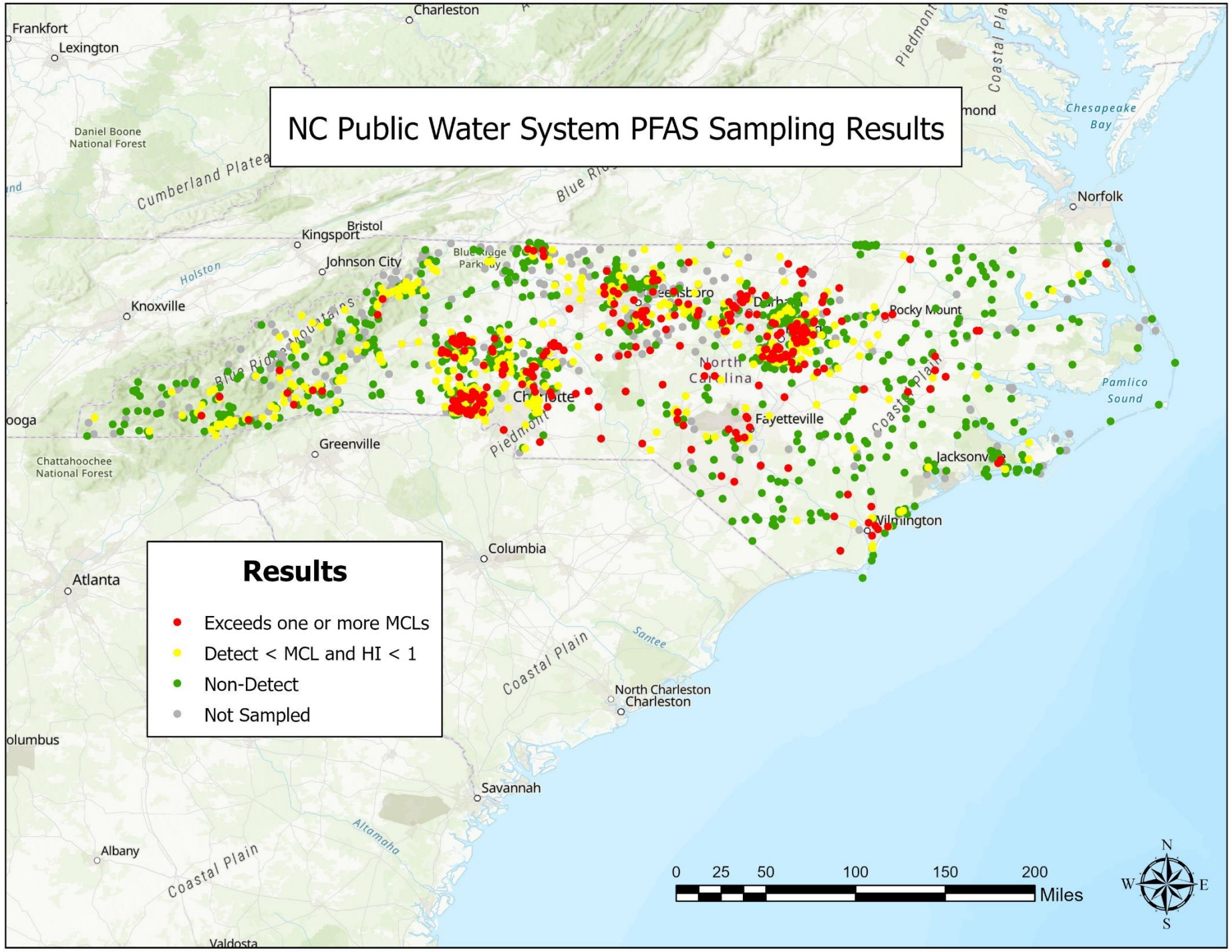
*Includes surface water purchase systems with their own source and Groundwater Under the Direct Influence of Surface Water (GWUDI) systems.

Final Rule MCLs and HI

Five Maximum Contaminants Levels (MCLs) for five individual PFAS and the Hazard Index (HI).

Chemical	Maximum Contaminant Level Goal (MCLG)	Maximum Contaminant Level (MCL)
PFOA	0	4.0 ppt
PFOS	0	4.0 ppt
PFHxS	10 ppt	10 ppt
HFPO-DA (GenX chemicals)	10 ppt	10 ppt
PFNA	10 ppt	10 ppt
Mixture of two or more: PFHxS, PFNA, HFPO-DA, and PFBS	Hazard Index of 1	Hazard Index of 1

Compliance determined by running annual averages at each entry point.


NC Public Water System PFAS Sampling Results
Results
Exceeds one or more MCLs
Detect < MCL and HI < 1
Non-Detect
Not Sampled
0 25 50 100 150 200
Miles
N
W
E
S
Charleston
Frankfort
Lexington
Daniel Boone National Forest
Cumberland Plateau
Blue Ridge
Piedmont
Coastal Plain
Chesapeake Bay
Norfolk
Bristol
Kingsport
Johnson City
Holston
Knoxville
Blue Ridge Mountains
Rocky Mount
North Carolina
Pamlico Sound
Greenville
Chattahoochee National Forest
Fayetteville
Jacksonville
Wilmington
Columbia
Atlanta
Santee
North Charleston
Charleston
Savannah
Altamaha
Albany
Valdosta

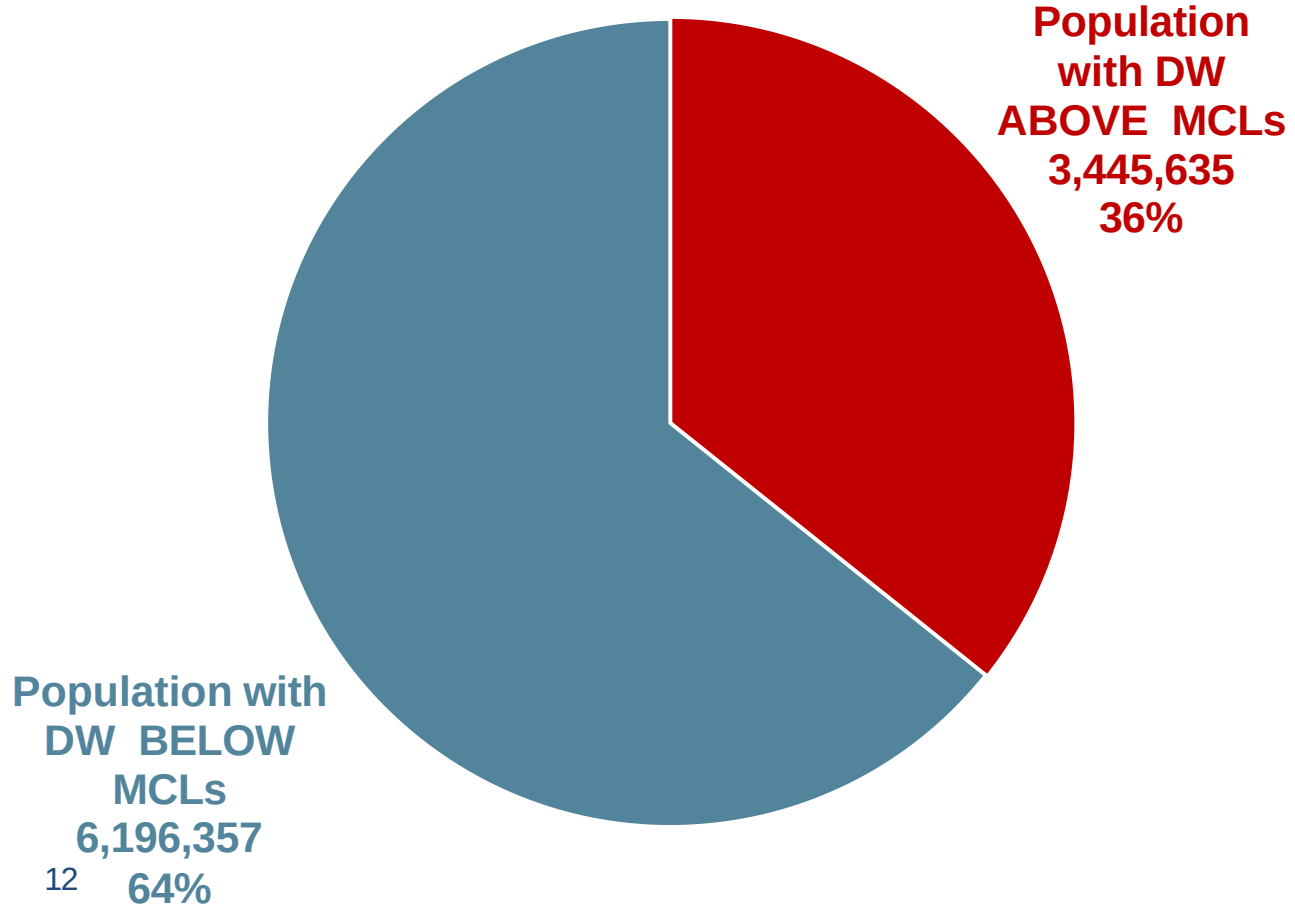
North Carolina Compliance Projections

- Based on sampling efforts thus far, it is projected that approximately 320 water systems would exceed one or more of the PFAS MCLs or the HI.

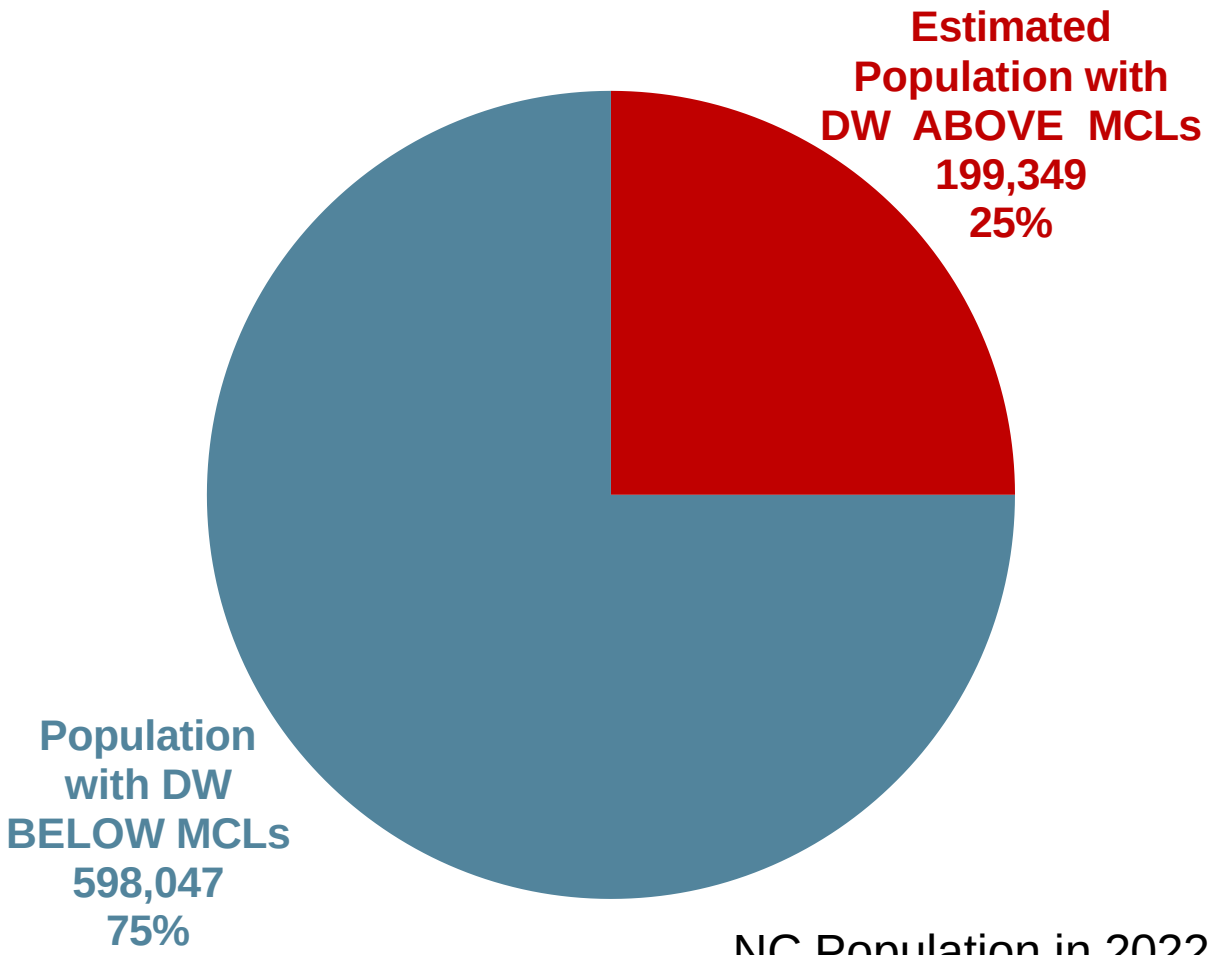
- Based on the number above, is projected that approximately 3,446,000 people in North Carolina would be served by systems that exceed one or more of the PFAS MCLs or the HI.

PFAS Currently in Drinking Water in NC

NC Population on Public Water Systems (9,641,992 people)



NC Population on Private Wells (797,396 people)

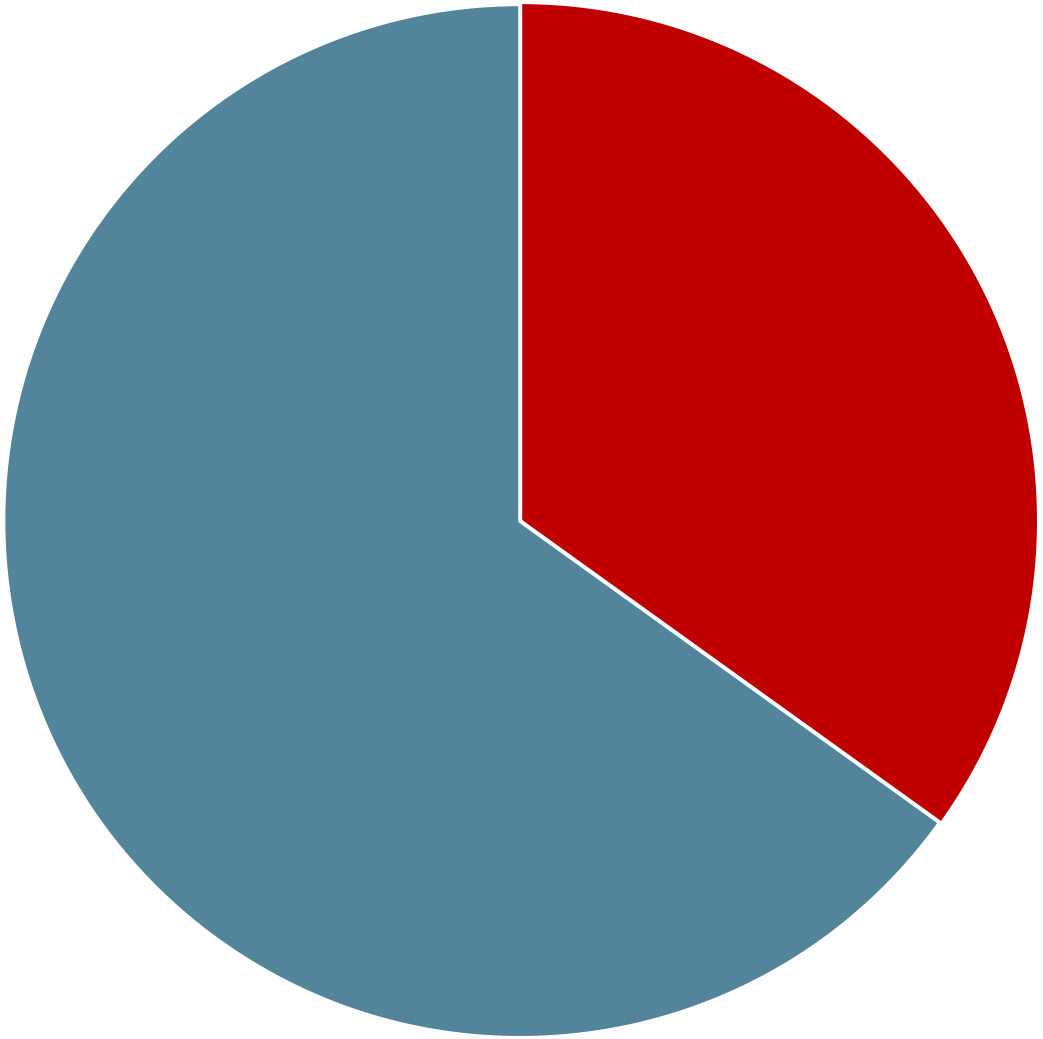


NC Population in 2022

PFAS Currently in Drinking Water in NC

Over 3.6 million North Carolinians are estimated to have PFAS in their drinking water *ABOVE* the federal MCLs

Total NC Population (10,439,388 people)



NC Population in 2022

Technologies for PFAS Removal

- Public water systems will need to change their source or implement advanced treatment options if their running annual average is above the MCL.
- This can potentially happen even before all quarterly samples are collected if the values are high enough to increase the running annual average above the MCL.
- The final rule does not set priorities or differentiate between contaminants

Best Available Technologies

- Anion exchange
- Granular activated carbon (GAC)
- Membrane filtration (reverse osmosis and nanofiltration)

Department of Environmental Quality
Division of Water Resources

Proposed 02B PFAS Surface Water Standards

PFAS Surface Water Quality Standards Guiding Principles

- Protect drinking water sources from upstream dischargers and other sources of contaminants into surface water.
- Reduce drinking water treatment cost burden to North Carolinians by addressing upstream dischargers.
- Reduce wastewater treatment cost burden to North Carolinians by addressing dischargers with background sources (e.g., residential) or are passive receivers after upstream reductions have occurred.
- Provide clarity to regulated sources and reasonable time for monitoring and taking actions to meet effluent limits.

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