

# Finger Lakes PFAS Project: targeted water sampling to identify per- and polyfluoroalkyl substances (PFASs) in the Finger Lakes

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# Per- and Polyfluoroalkyl Substances (PFAS)

- Highly sought after in industry
- Ubiquitous in environment
- Widely used in various consumer and industrial products



<https://defence.gov.au/environment/pfas/PFAS.asp>

<https://ecology.wa.gov/Waste-Toxics/Reducing-toxic-chemicals/Addressing-priority-toxic-chemicals/PFAS>



# Regulations for Drinking Water

State Level  National Level

States with prior regulations: **New York**, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin.

EPA Regulations (as of 4/10/24):

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

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety and are non-enforceable public health goals.



# FLX PFAS Project Overview

- Phase 1: Project setup

- Phase 2: Sample collection and preparation

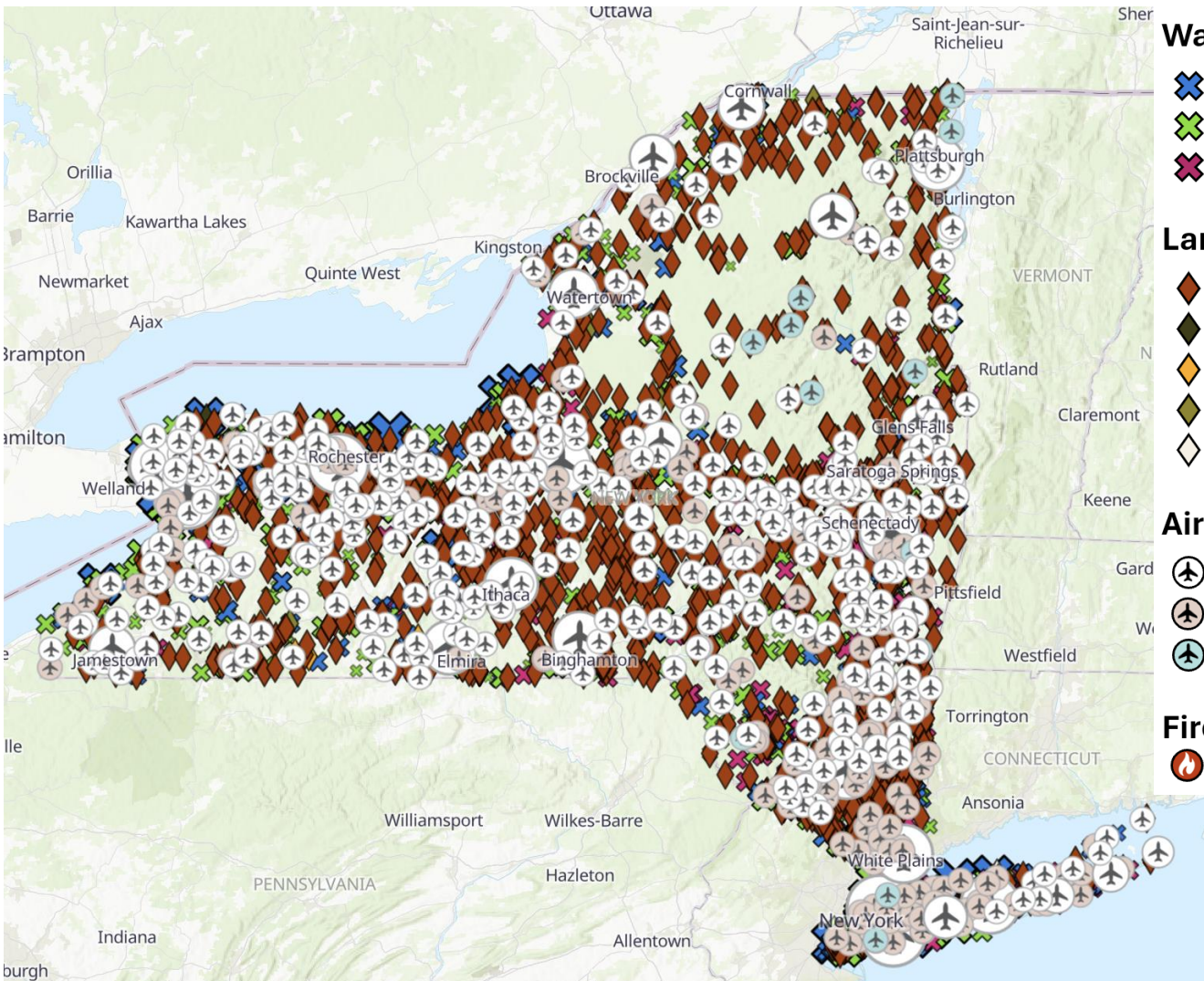
- Phase 3: Sample analysis

Quality  
Assurance  
Project Plan  
(QAPP)

- Phase 4: Data visualization



# Project Setup - ArcGIS Map of Possible Sources



## Wastewater Treatment Plants

- Industrial
- Municipal
- Other

## Landfills

- Inactive Landfills
- Industrial Waste Monofill Landfills
- CD&D Landfills
- MSW Landfills
- Long Island Landfills

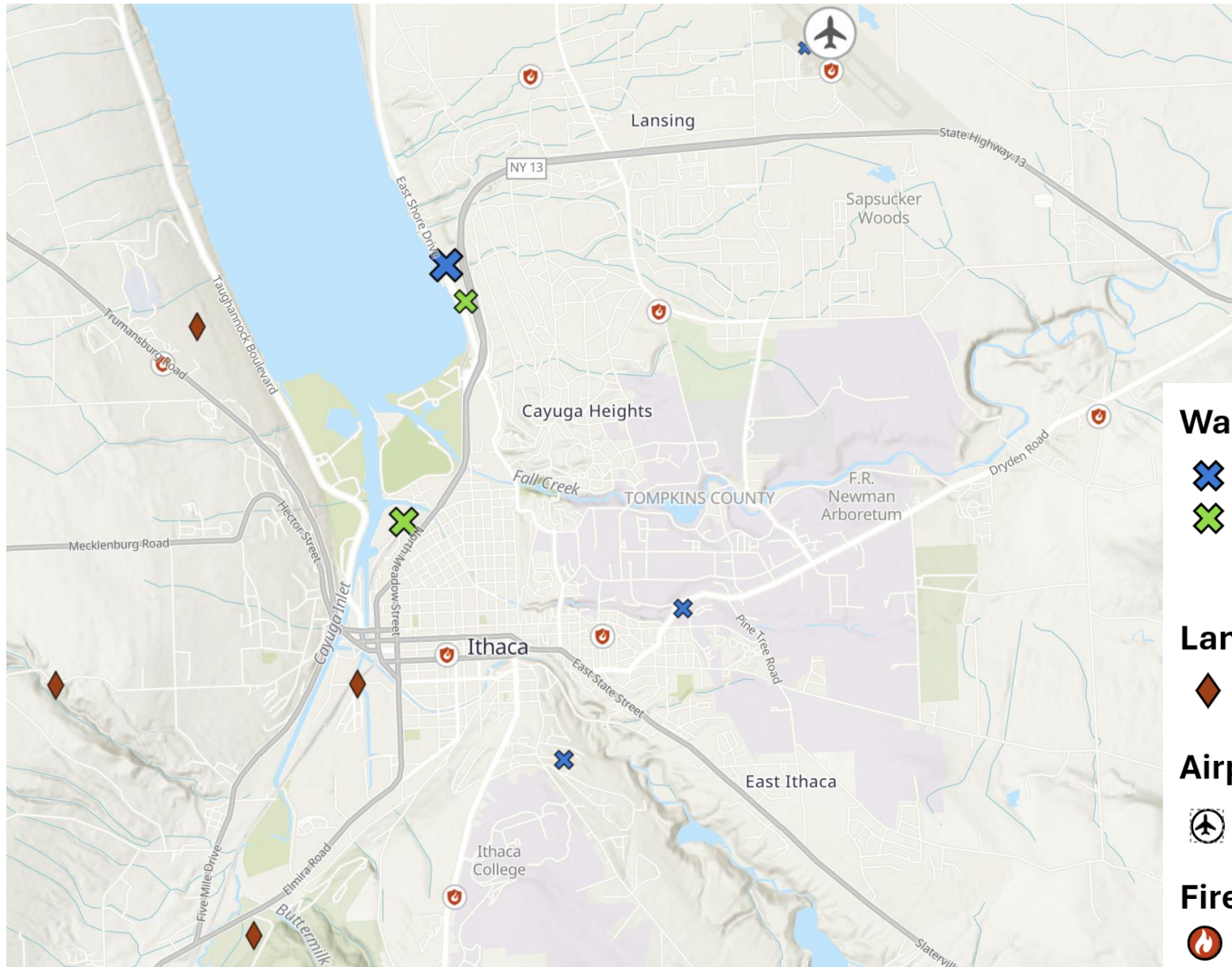
## Airports

- Airport
- Heliport
- Seaplane Base

## Fire Stations



# Project Setup - ArcGIS Map of Possible Sources



## Wastewater Treatment Plants

- Industrial
- Municipal

## Landfills

- Inactive Landfills

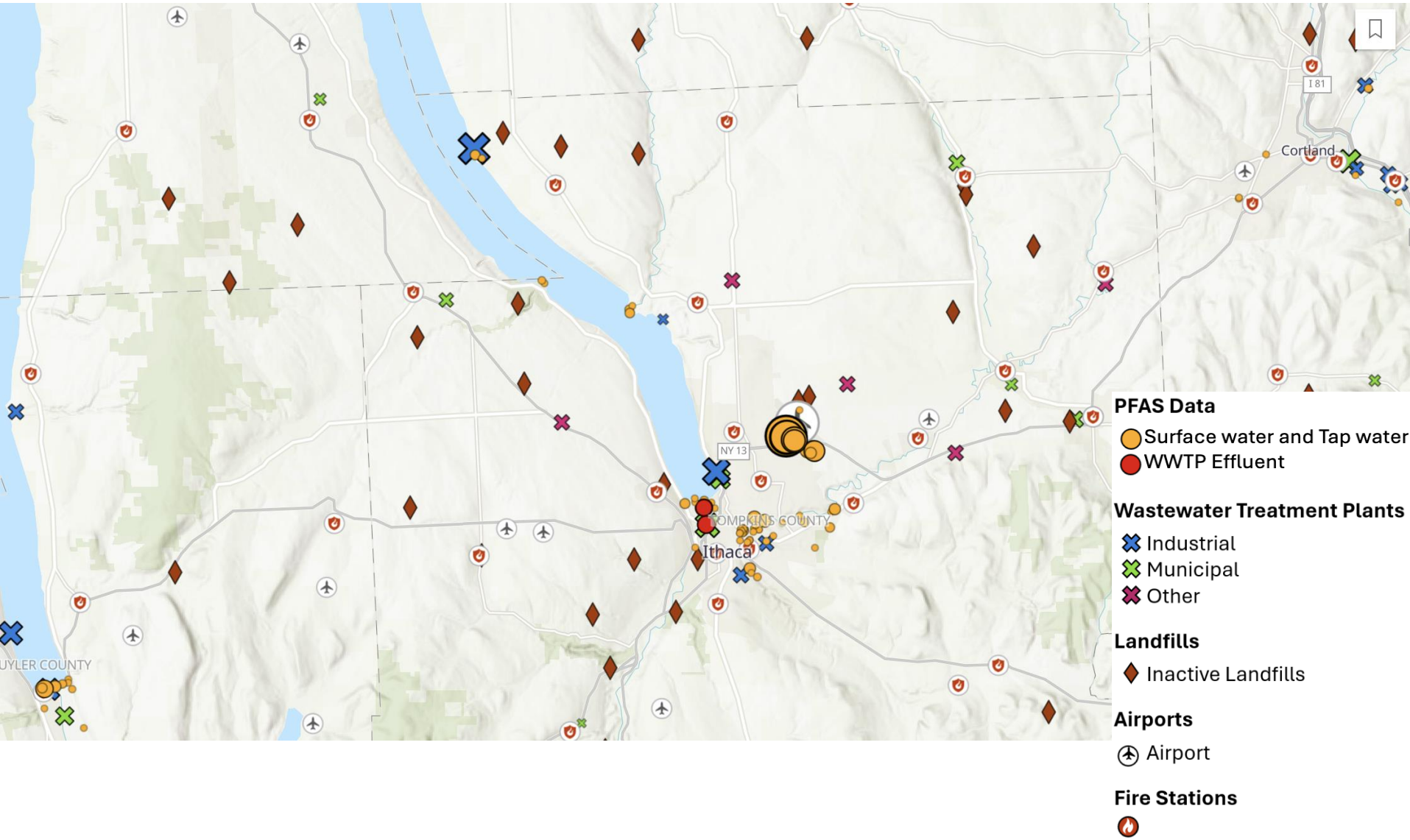
## Airports

- Airport

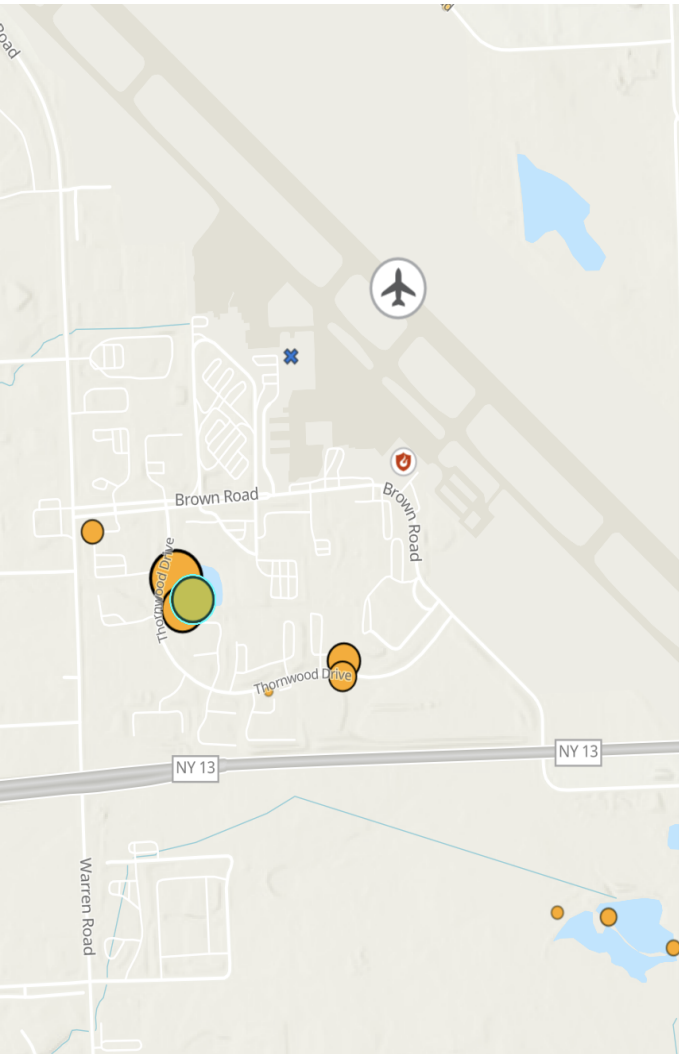
## Fire Stations



# Data Visualization



# Data Visualization



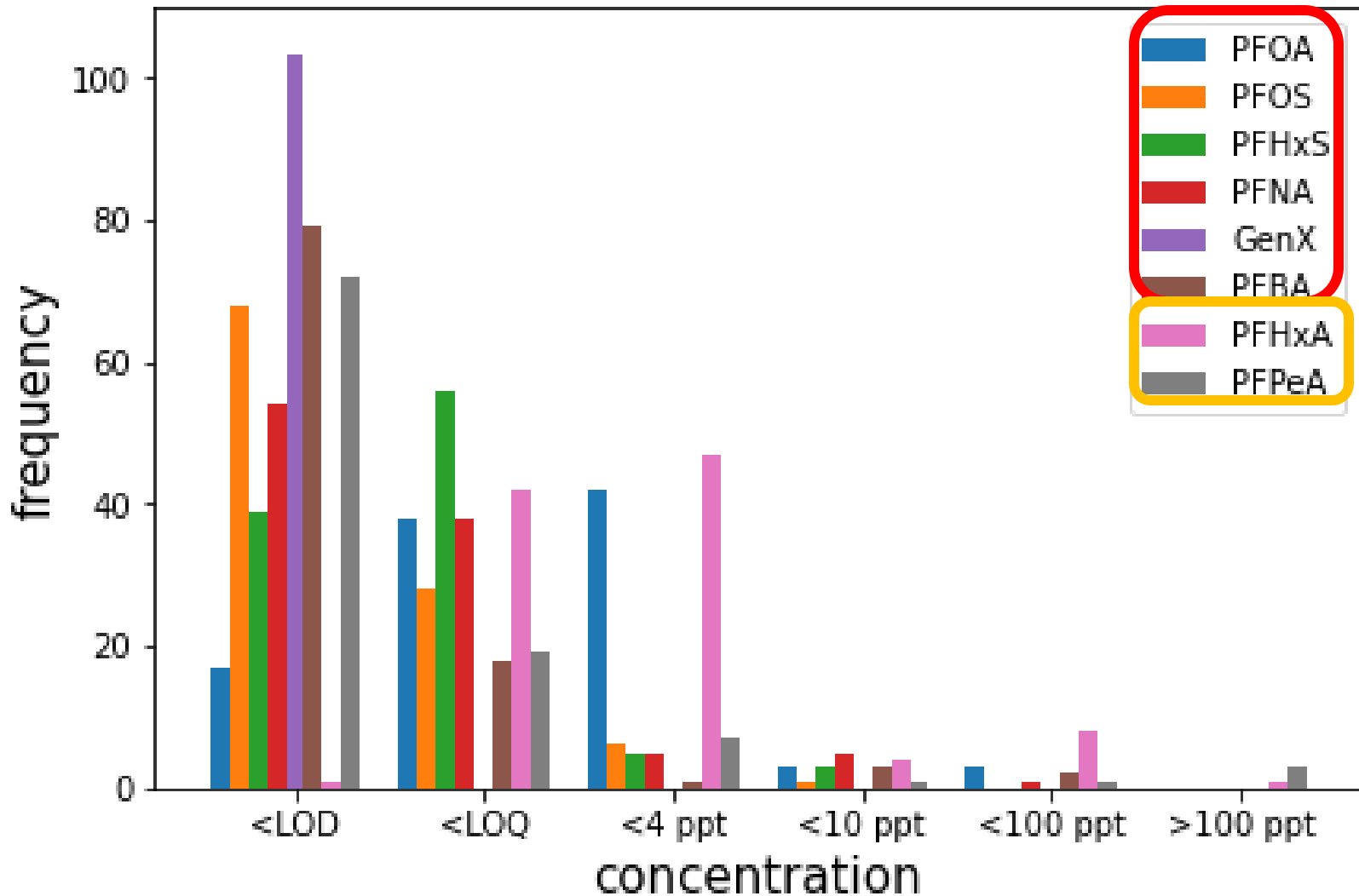
11.04		11.04	
FID	96	F12_GenX	<LOD
F01_PFBFA	11.04	F13_PFBFS	1.42
F02_PFPeA	103.96	F14_PFHxS	4.16
F03_PFHxA	93.98	F15_PFHpS	<LOQ
F04_PFHpA	19.98	F16_PFOS	<LOQ
F05_PFOA	10.65	F17_PFDS	<LOD
F06_PFNA	6.18	Date	3/23/2024, 8:00 PM
F07_PFDA	<LOQ	Time	14:33
F08_PFUoA	5.92	Source	Indoors, Outdoors
F09_PFDoA	DNM	Latitude	42.485648
F10_PFTrDA	DNM	Longitude	-76.464263
F11_PFTA	DNM	Additional	partially frozen
F12_GenX	<LOD	pH	8.340000
F13_PFBFS	1.42	LastRainHR	31.000000
F14_PFHxS	4.16	Rain_IN	0.610000
F15_PFHpS	<LOQ	PFAS_Total	257.290000



# Data Visualization

- 103 samples: surface water, tap water, wastewater treatment plant effluent
- Target analysis of 17 different PFAS
- 6 PFAS not found in any of the samples: PFDoA, PFTrA, PFTA, Gen X, PFHpS, PFDS
- Remaining 11 PFAS found to varying degrees





<LOD: below limit of detection (instrument cannot detect PFAS)

<LOQ: below limit of quantification (below the lowest amount that can be determined with acceptable precision and accuracy.)



# Limitations

- Grab samples - only have information for one moment in time.
- Availability of water - is there any surface water to sample near locations of interest?
- Accessibility of locations: restricted areas near airports, wastewater treatment plants.
- Contact us!



# Preliminary Conclusions

- The project focuses on the prevalence of PFAS in the Finger Lakes region.
- We are doing targeted water sampling around possible sources of PFAS to fill this knowledge gap.
- After analyzing > 100 samples, we find low prevalence of PFAS aside from a few locations.
- Mapping and communicating the results



# Thank You!



## Committee

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# Questions?

Check out our website!

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