



Michigan Taking Action on PFAS

Mary Ann Dolehanty
Air Quality Division Director
Michigan Department of Environmental Quality



NACAA 2018 Fall
Membership Meeting
October 15-16, 2018
Cleveland, OH



MPART

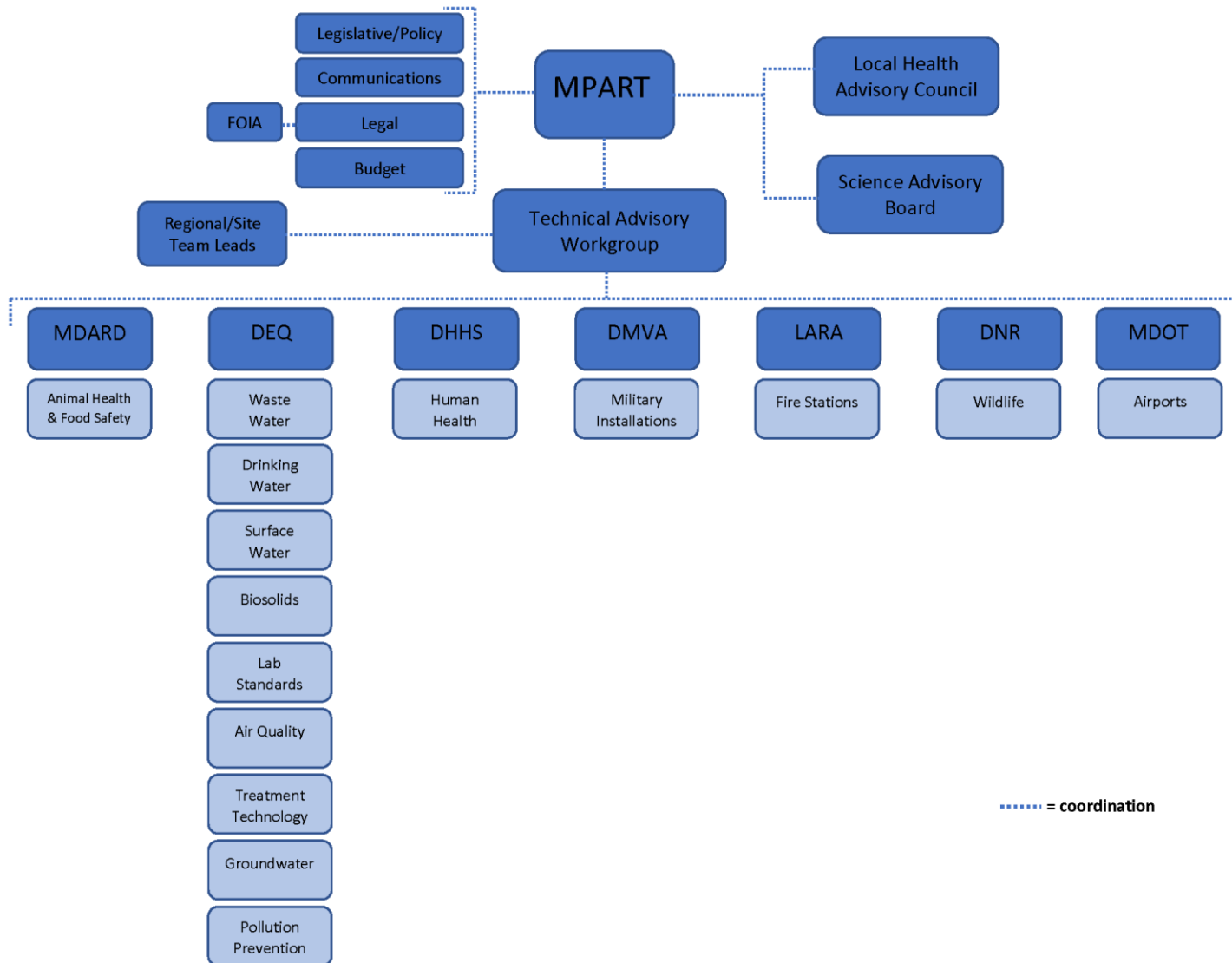
Michigan PFAS Action Response Team

www.michigan.gov/pfasresponse

- **Governor Rick Snyder's Executive Directive**
 - Signed in November 2017
 - Designed to ensure comprehensive, cohesive, timely response to continued mitigation of PFAS substances across Michigan
 - Cooperation and coordination among all levels of government
 - Directs implementation of state's action strategy



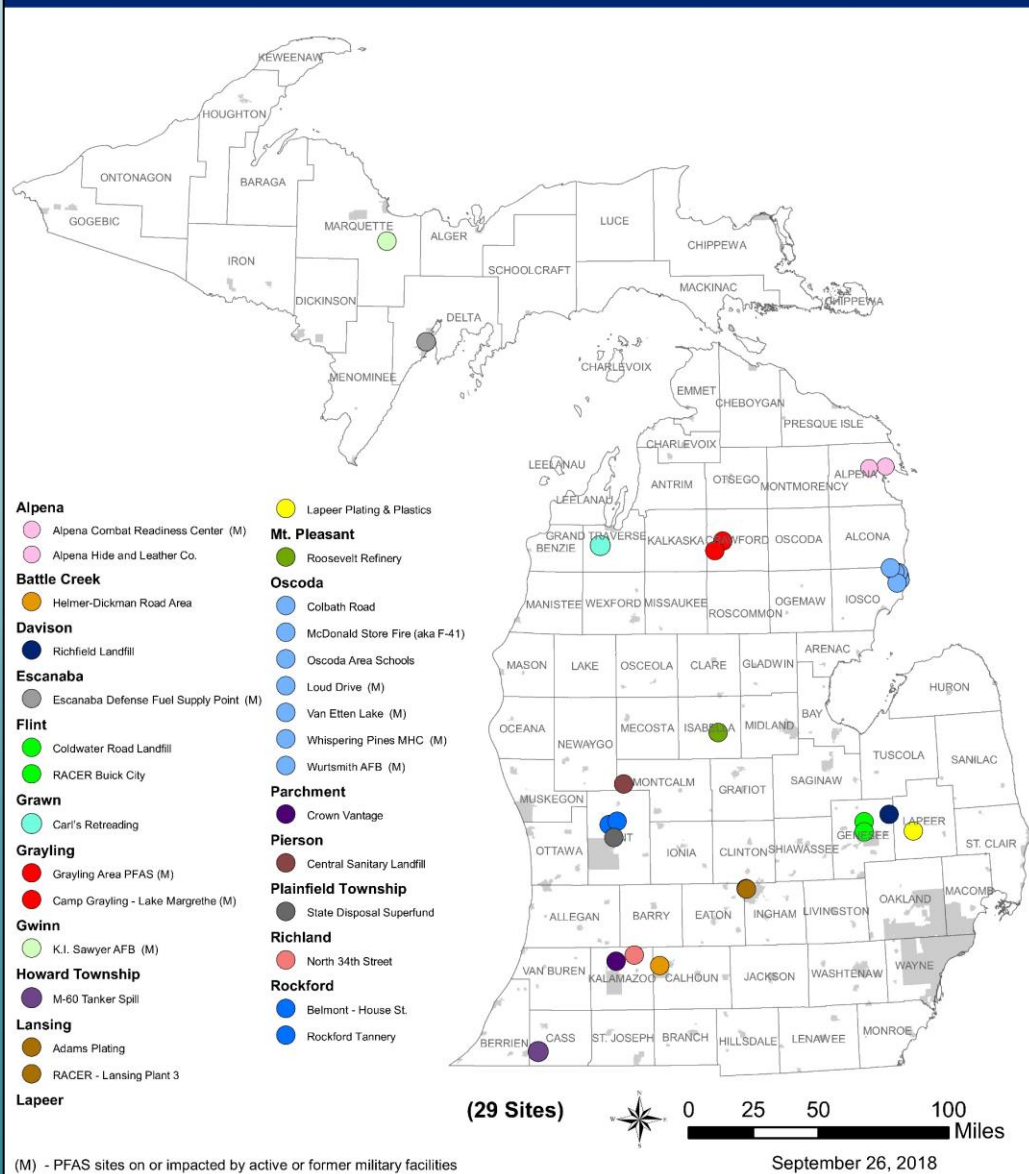
MPART





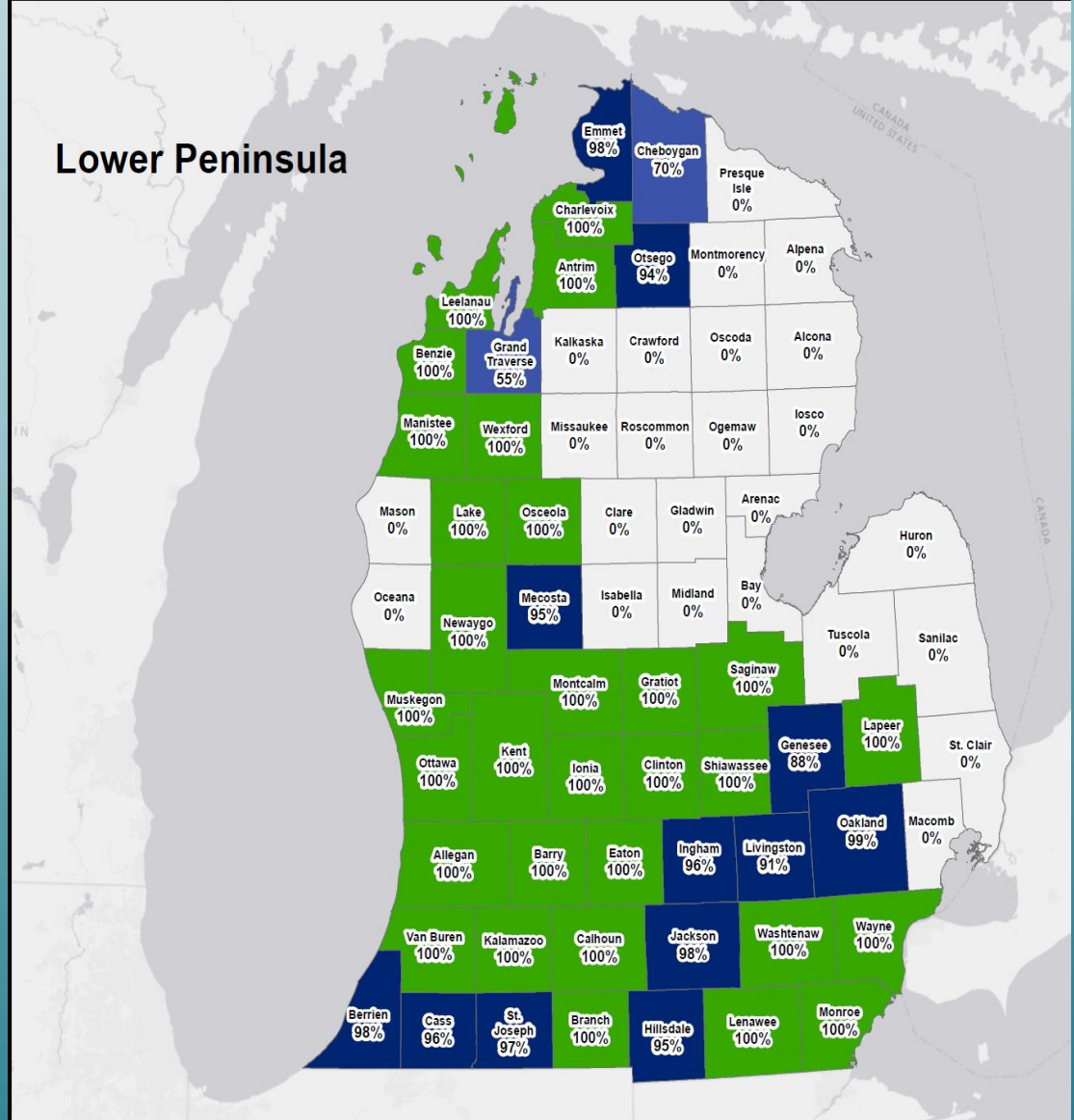
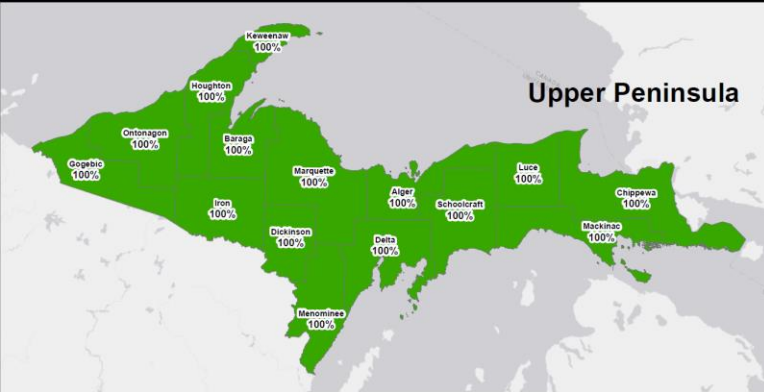
Addressing 29 Known Sites

- Multi-agency project teams
- Investigation
- Alternate drinking water
- Community engagement





Statewide Municipal Drinking Water Testing Program



Public Water
Supply
Testing



Statewide Drinking Water Testing Initiative Results

	Supplies Sampled	Overall Number of Supplies	% Samples Collected (not results received)	Supply Samples Received	% Results Received (vs. supplies sampled)	Non-Detect (ND) Total PFAS	< 10 ppt Total PFAS (non ND)	10 – 70 ppt PFOS/PFOA (> 10 ppt Total PFAS)	> 70 ppt PFOS/PFOA
Community Water Supplies	878	1,111	79%	594	67%	516	62	15	1
Schools on Wells	357	460	77%	254	71%	230	13	11	0
Tribes	7	14	50%	2	29%	2	0	0	0
Total	1242	1,585	78%	850	68%	748	75	26	1

As of October 11, 2018



Surface Water Investigation

- ❖ Ambient monitoring
- ❖ Public owned treatment works
 - ❖ Industrial pretreatment program (IPP)
 - ❖ Biosolids
- ❖ Industrial direct dischargers
- ❖ Surface water foam





IPP PFAS Initiative Requirements

- Potential Source Screening
- Monitor Probable Sources
- If sources found:
 - Reduce/Eliminate PFOS & PFOA Sources
 - Monitor POTW effluent; report if exceeds standards
- Continue Source Reduction & Monitoring





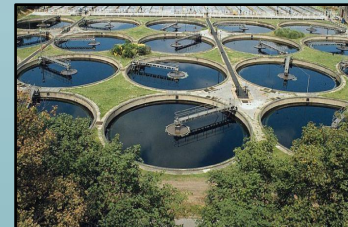
Potential PFAS Sources in Industry



Refineries



Emergency Response



**Wastewater Treatment
Plants**



Biosolids Application



Metal Plating



Manufacturing



**Landfills and Waste
Disposal Areas**



Airports



- At least 33 species in 14 locations have advisories related to PFOS

Officials: Don't eat fish from Huron River

Associated Press Published 4:09 p.m. ET Aug. 4, 2018 | Updated 4:09 p.m. ET Aug. 4, 2018



(Photo: Brandy Baker, Detroit News file)

Milford – Health officials are warning people not to eat fish from parts of the Huron River because of chemical contamination.

The emergency "Do Not Eat" advisory issued Saturday applies to all fish from the Huron River from Oakland County's Milford to the Livingston and Washtenaw county border. That includes lakes connected by the river, including Kent Lake.

Fish from the lake were tested for perfluorooctane sulfonate (PFOS) and found to contain high levels. The substances, among chemicals referred to broadly as PFAS, are used in manufacturing, firefighting and thousands of household and consumer products.

Touching the fish or swimming in the water isn't considered a health concern.

PFAS have been detected in waterways in about 30 states. The Michigan Legislature enacted \$23 million in emergency spending to address PFAS contamination.





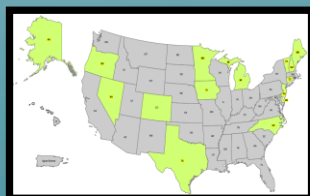
1930's - 1990's

- No regulatory or environmental concerns



1990's - 2009

- Initial environmental concerns documented
- US EPA Provisional Health Advisory (HA)
- (PFOA = 400 ppt, PFOS = 200 ppt)



2010 - 2017

- Individual States developing criteria
- US EPA Lifetime Health Advisory (PFOA, PFOS, or PFOA + PFOS = 70 ppt)



Parts per trillion

1 ppt = 1 drop
(0.05mL) in
20 Olympic
Swimming Pools



Note: 1 Olympic Pool = 660,000 gallons



Michigan Water Standards

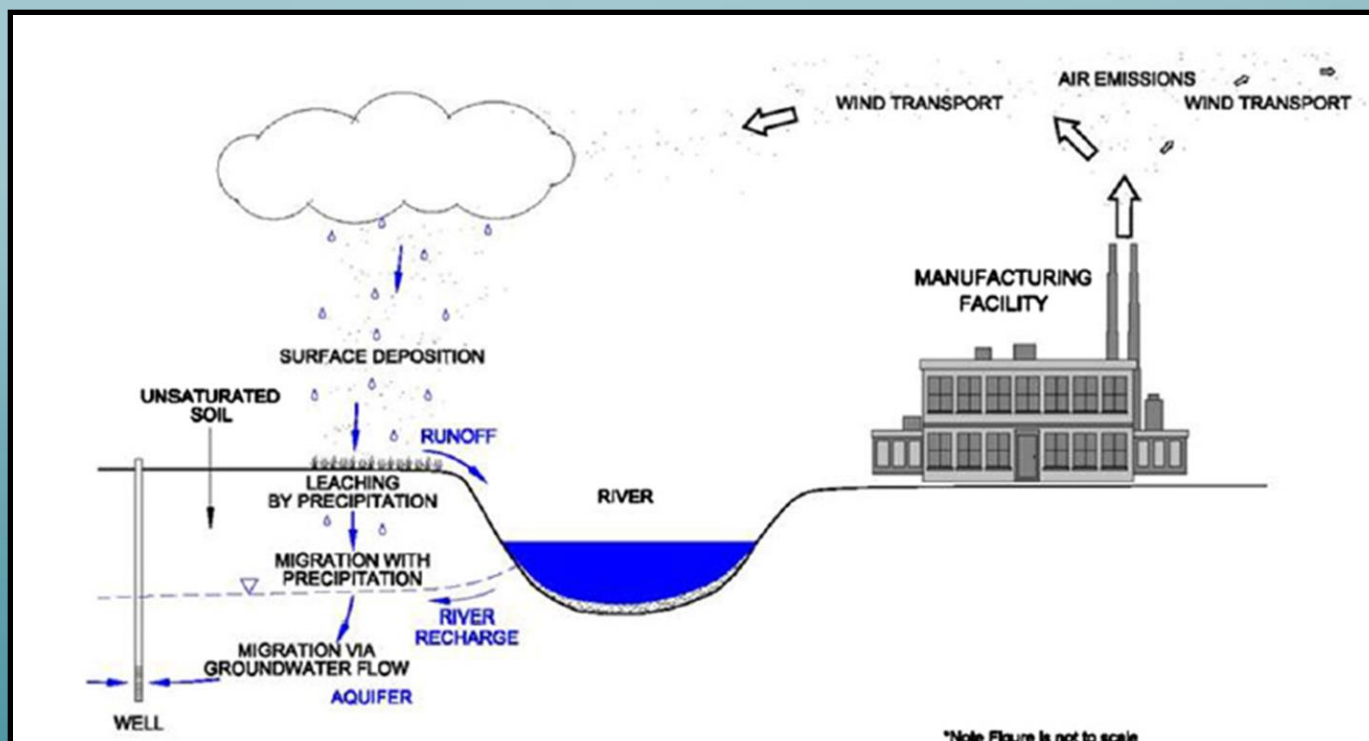
- **Surface Water - Rule 57 Water Quality Standards**
 - **PFOA**
 - 420 ppt (drinking water source)
 - 12,000 ppt (non-drinking water source)
 - May 2011
 - **PFOS**
 - 11 ppt (drinking water source)
 - 12 ppt (non-drinking water source)
 - March 2014

- **Groundwater for drinking water clean-up standard**
 - 70 ppt PFOS and PFOA individually or combined
 - January 10, 2018



ITSL for PFOS & PFOA

- Initial Threshold Screening Level for PFOS and PFOA (additive) $0.07 \mu\text{g}/\text{m}^3$ – 24 hour averaging time developed





Chrome Platers

- **40 CFR 63 Subpart N - National Emission Standards for Chromium Emissions From Hard and Decorative Chromium Electroplating and Chromium Anodizing Tanks**
- **63.342(c)(2)(viii)** After September 21, 2015, the owner or operator of an affected enclosed hard chromium electroplating tank shall not add PFOS-based fume suppressants to any affected enclosed hard chromium electroplating tank.
- *Perfluorooctane sulfonic acid (PFOS)-based fume suppressant* means a fume suppressant that contains 1 percent or greater PFOS by weight; that's 10 billion parts per trillion.



Chrome Platers

- As of 9/30/18, 28 were reportedly found to use PFAS (PFOS-free)
- Hard Chrome Plating - PFAS are used in these tanks even if Air Pollution Control Devices are in place
- Dec Chrome Plating – in etch tanks too, plating on plastics - most problematic
- PFAS are “sticky” and cling to duct work





Key Take Away Points

Unlike contaminants we're familiar with

- Widespread / mobile
- Potential health risks
- Challenging to remediate

Science Evolving Rapidly

- Regulations, policy, laboratory analysis, toxicity, fate & transport, treatment technologies

Other Considerations

- Communication - Media / Residents /Public perception



QUESTIONS?

