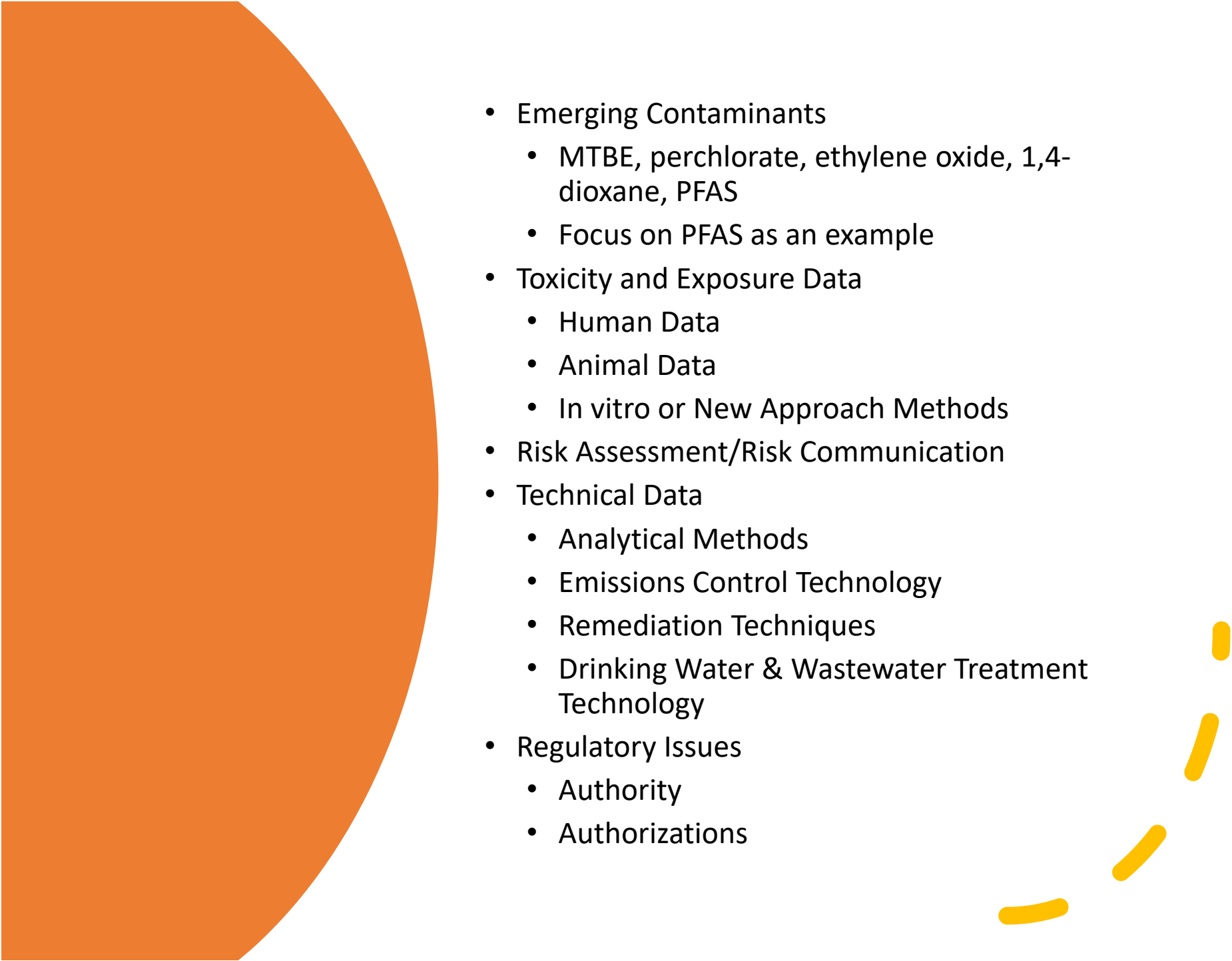


- 
- Emerging Contaminants
 - MTBE, perchlorate, ethylene oxide, 1,4-dioxane, PFAS
 - Focus on PFAS as an example
 - Toxicity and Exposure Data
 - Human Data
 - Animal Data
 - In vitro or New Approach Methods
 - Risk Assessment/Risk Communication
 - Technical Data
 - Analytical Methods
 - Emissions Control Technology
 - Remediation Techniques
 - Drinking Water & Wastewater Treatment Technology
 - Regulatory Issues
 - Authority
 - Authorizations

Emerging Contaminants

33rd Annual Texas Environmental Superconference

Alexandra Dapolito Dunn

August 5, 2021

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PFAS: Used and Found Everywhere



Responding to PFAS

- Thousands of PFAS substances produced since 1940s, over 600 in commerce today
- Focus on Perfluorooctane Sulfonate (PFOS) & Perfluorooctanoic Acid (PFOA)
 - Prevalent and commonly used for decades; production ended in early 2000s
 - Aqueous Film Fighting Foam (AFFF) (firefighting foam) can contain both
- Varying federal and state action values, policy approaches, and data collection efforts
 - Only Federal Level is a 70 PPT lifetime drinking water exposure level, over this level there is concern
- Research focus on replacements and new chemistries

Why are PFAS Concerning?

Toxic & Persistent ("forever chemicals")

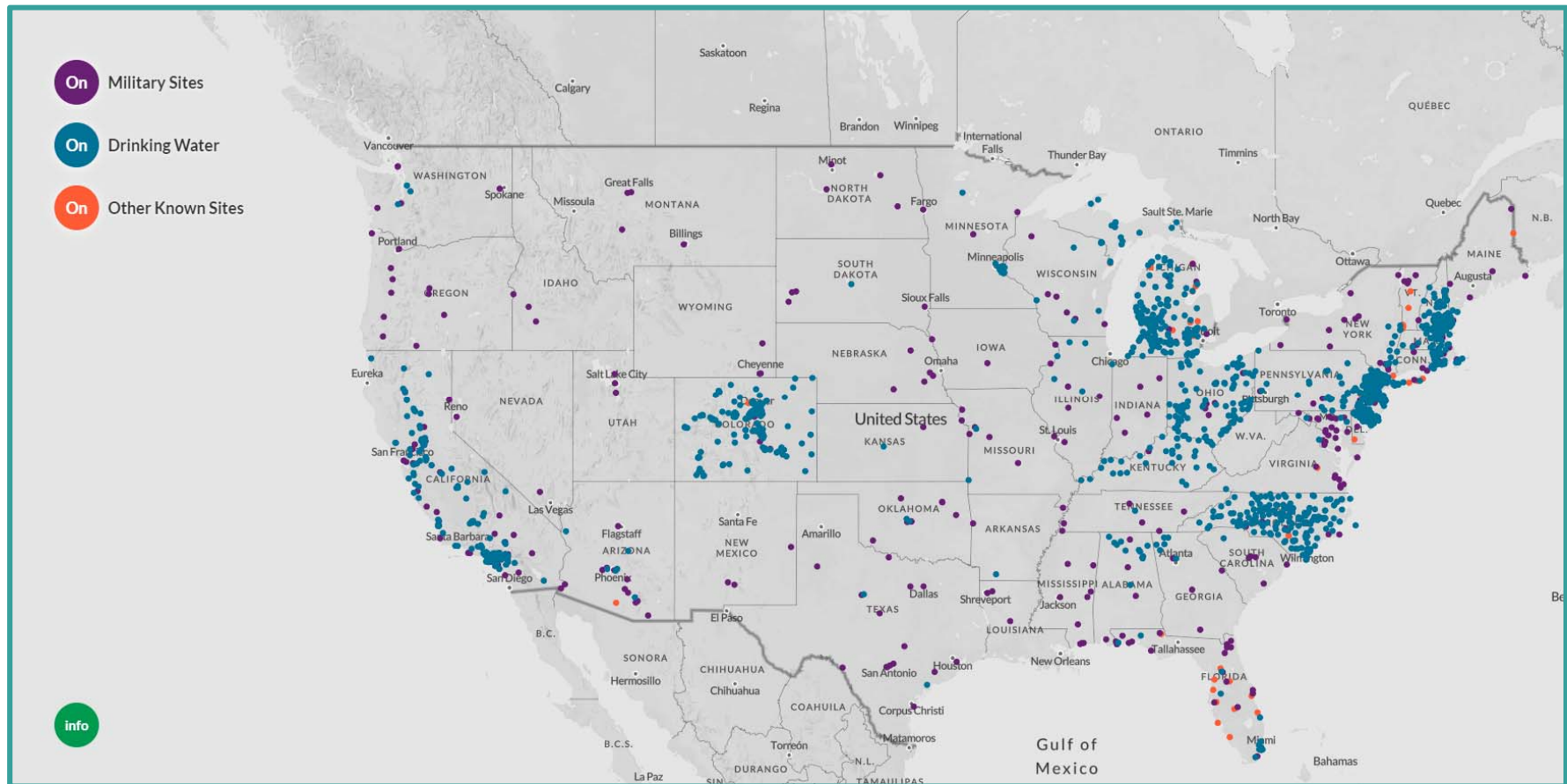
Mobile (highly water soluble)

Bioaccumulative

Globally distributed

Negative Health Effects
(pulmonary, liver, reproduction, cancer, etc.)

PFAS Contamination Snapshot

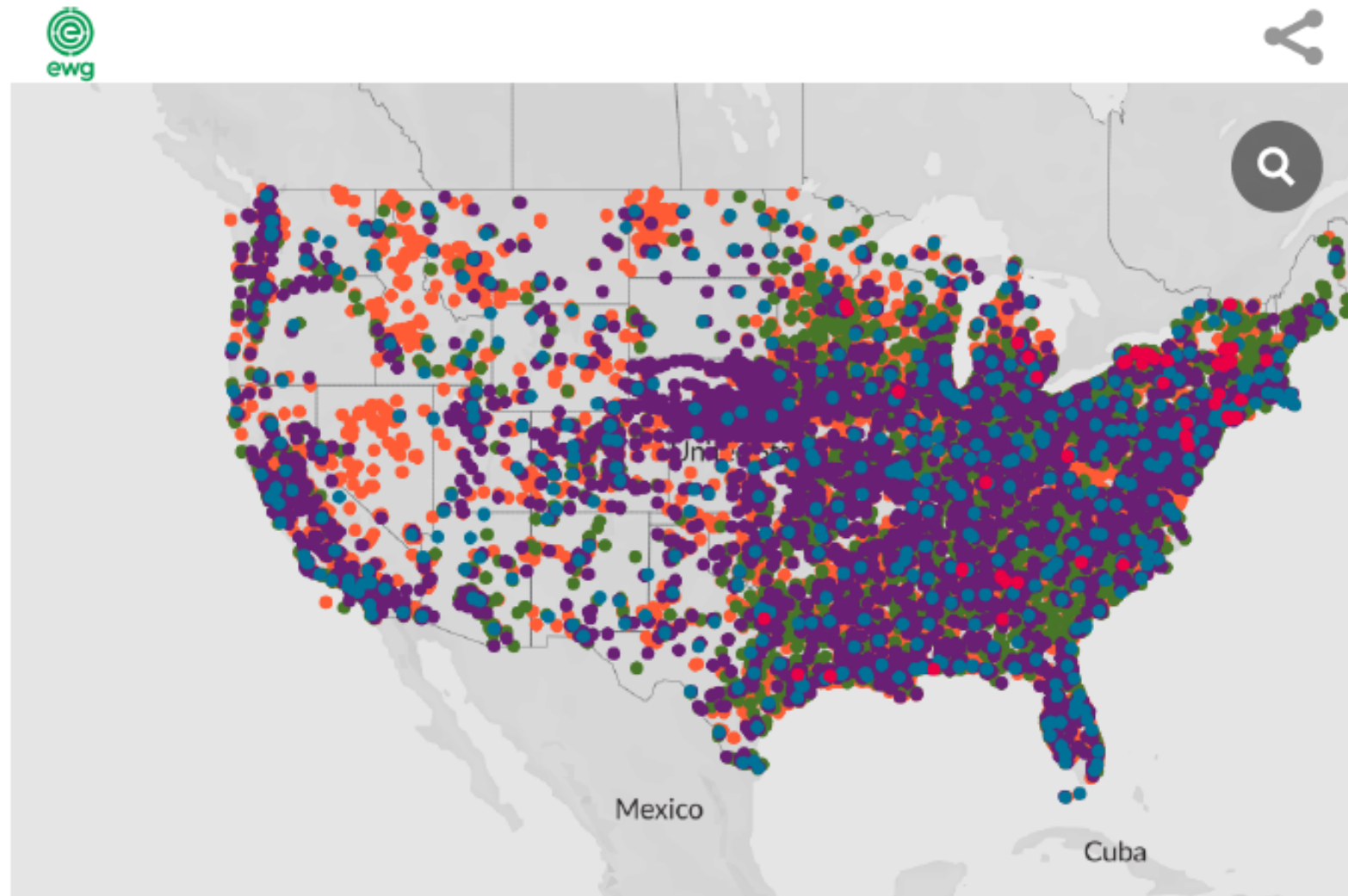


Environmental Working Group and SSEHRI at Northeastern University, *PFAS Contamination in the U.S.*, https://www.ewg.org/interactive-maps/pfas_contamination/map/ (last updated Jan. 6, 2021)

PFAS Contamination Snapshot: By Industrial Source/Activity that Used PFAS

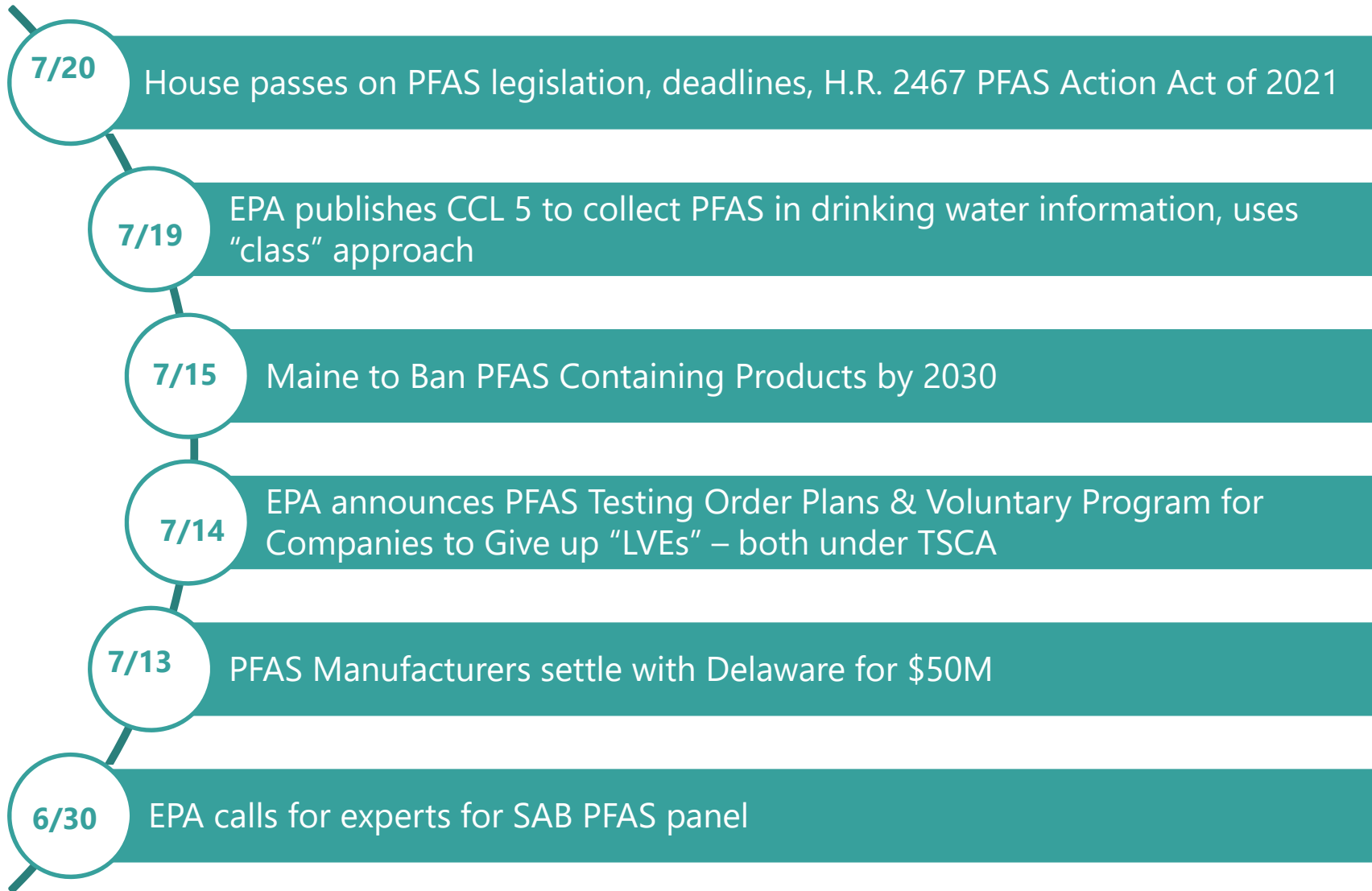
7/19/2021

Interactive Map: Suspected industrial discharges of PFAS



https://www.ewg.org/interactive-maps/2021_suspected_industrial_discharges_of_pfas/map/

PFAS in the News Daily: Examples



Federal Regulation Examples

Safe Drinking Water Act (SDWA)

Authorizes EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants

Proposed Fifth Unregulated Contaminant Monitoring Rule (UCMR 5): requires sampling for 29 PFAS

Toxic Substances Control Act (TSCA)

Authorizes EPA to regulate chemical substances and mixtures

EPA requires notice and review before the use of long-chain PFAS that had been phased-out can begin again; certain PFAS-containing imports must be reviewed and approved; proposed "Data Call" rule out for comment now

Resource Conservation and Recovery Act (RCRA)

Authorizes EPA to regulate hazardous waste

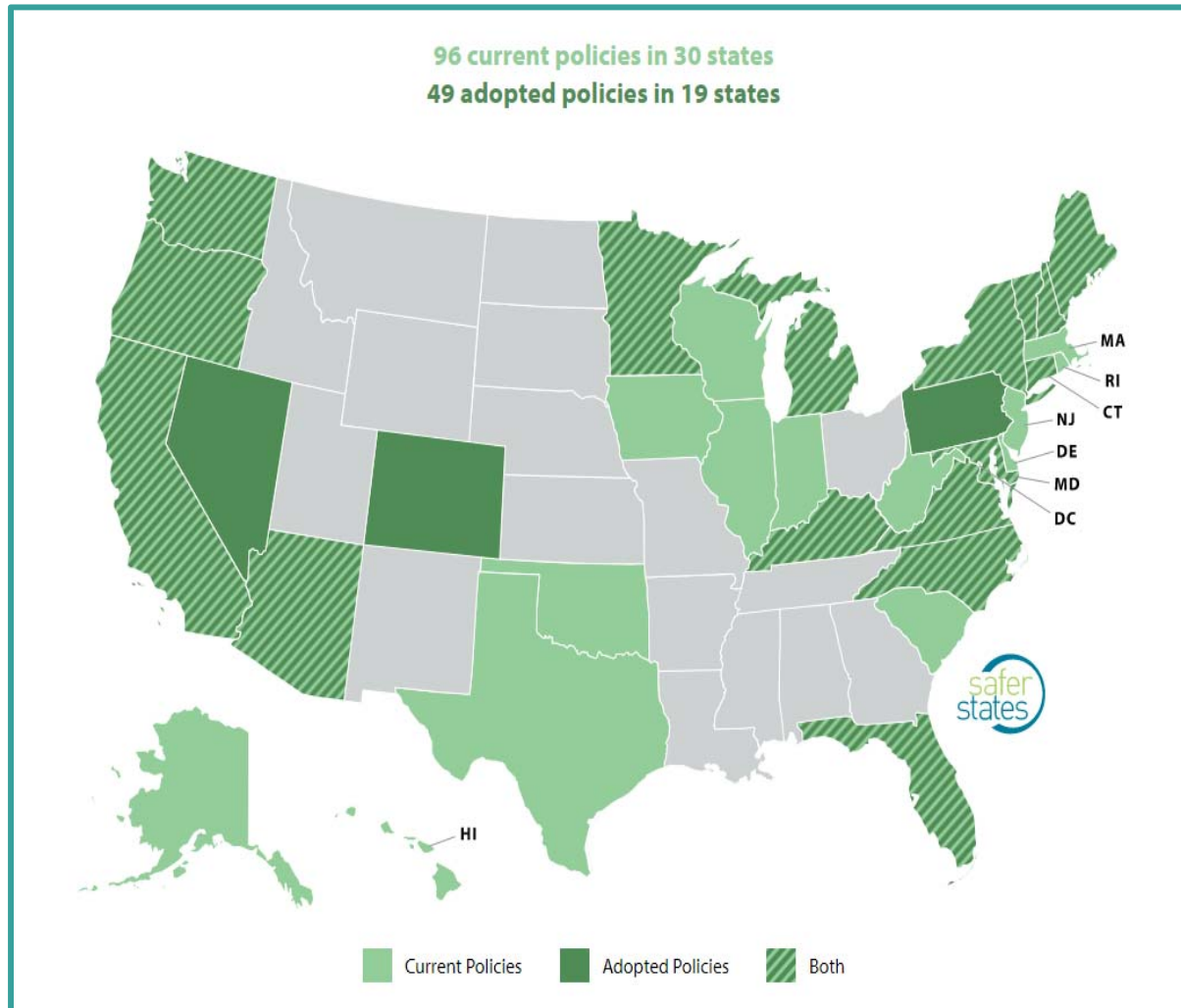
Petition to designate PFAS as hazardous waste from NGOs & NM
EPA also considering on own

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund)

Authorizes EPA to clean up hazardous waste sites

Proposed bill to designate PFOA and PFOS as hazardous substances
EPA considering on own

State Regulation Snapshot



Safer States, *PFAS*, <https://www.saferstates.com/toxic-chemicals/pfas/> (last visited June 28, 2021)

Consumer Products

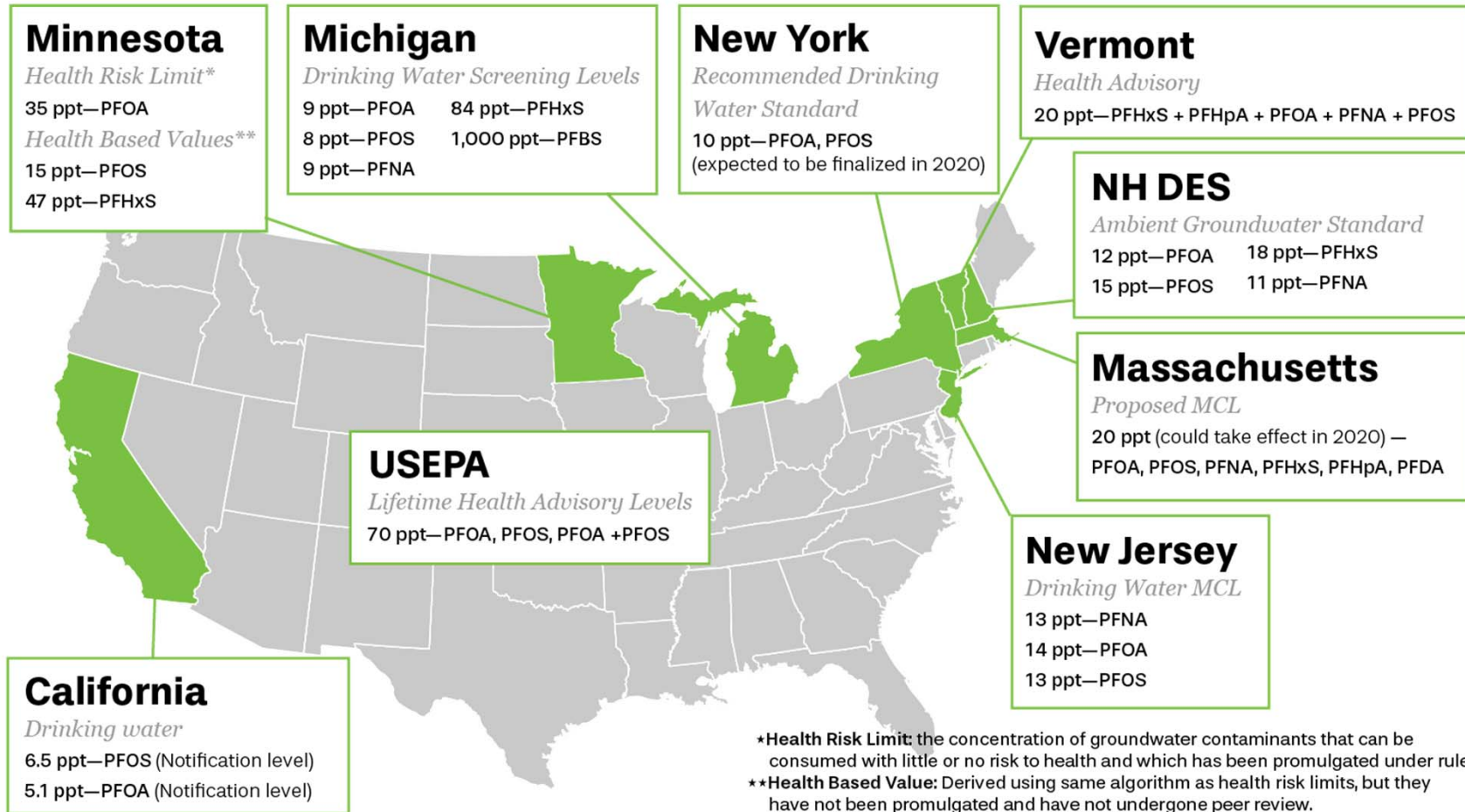
Requiring manufacturers to consider alternatives – state can place restrictions on use of PFAS or manufacture can use alternative, remove PFAS, or withdraw the product

Maine: Ban set for 2030

California – listed carpets and rugs containing PFAS as priority product

May 2021 Vermont ban includes ski wax, carpets

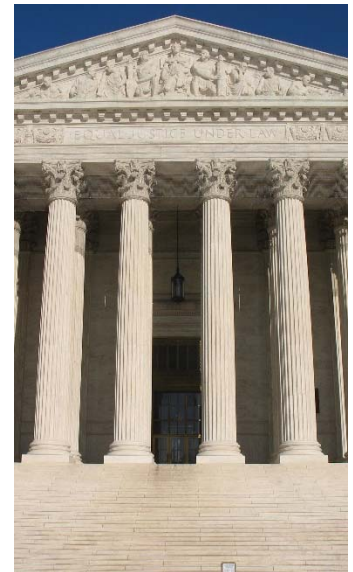
Varying Levels for Response, Notification, Regulation



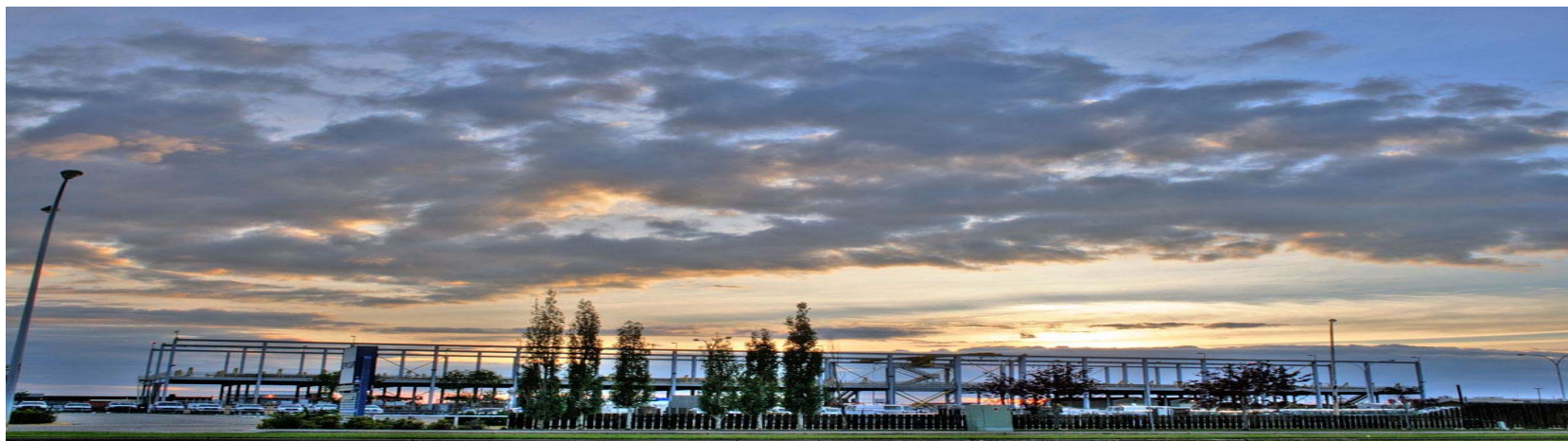
<https://cdmsmith.com/en/Client-Solutions/Insights/PFAS-2020>

PFAS Litigation Examples

- Actions alleging damages and injuries from PFAS production facilities
- Claims by State Attorneys General, municipalities, water suppliers, etc., against makers of PFOA/PFOS and AFFF
- Nationwide class action by firefighters and others alleging injuries due to PFAS
- Suits claiming damage from facilities that used or disposed of PFAS
- Claims against Department of Defense
- State enforcement



Claims Against PFAS Manufacturers and PFAS Users



Manufacturers

- Defective Product
- Property Damage
- Groundwater / Soil Contamination
- Nuisance
- Injury
- Medical Monitoring
- Cleanup

Users

- Property Damage
- Groundwater / Soil Contamination
- Nuisance
- Injury
- Medical Monitoring
- Cleanup

Being Responsive



- Track Legal, Regulatory & Policy Developments (Federal and State)
- Transactions
- Evaluate Corporate PFAS Compliance Policies & Procedures
 - PFAS Program Governance, Structure & Content
 - Internal Due Diligence
 - Corporate Information Sharing
 - Monitoring & Reporting
 - Management of PFAS Stockpiles / Disposal of PFAS
 - Develop Corporate Risk Profile
 - Policies and Practices Related to Community and Media/External Engagement
 - Benchmarking
- Evaluate Legal Claims & Litigation Holds
- Manage and Respond to State Requests for Data and Information
- Engage with National Organizations to Leverage Corporate Advocacy Impact

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