

Note: This session has live audience polling

Review & Preview

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Casualty Catastrophes and Emerging Liability Risks

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PFAS Overview

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RAMBOLL

Review & Preview

PFAS: Diverse challenges require Diverse solutions



Ramboll offers advanced consulting expertise in these topics

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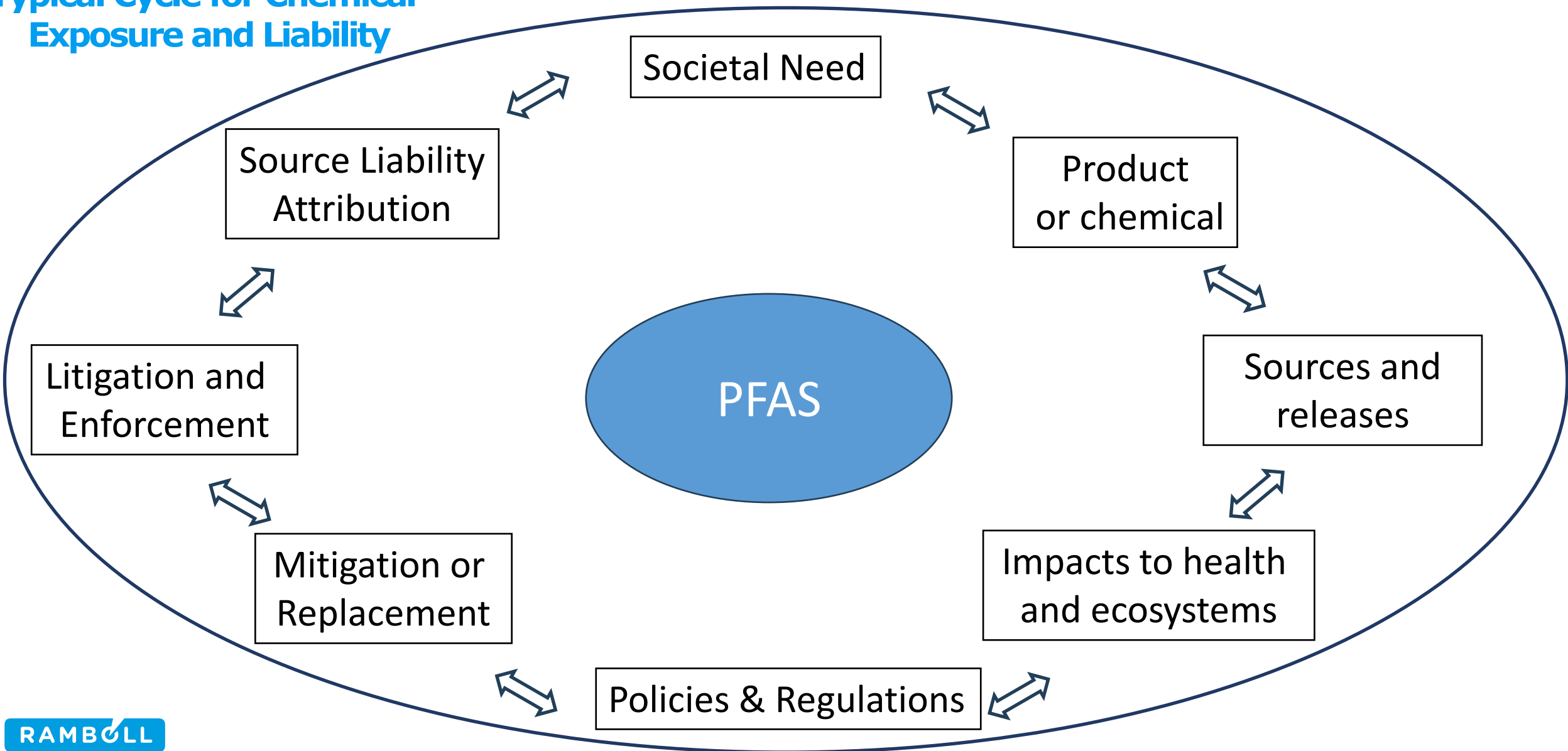
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Every effort has been made to present the most accurate information, but because the PFAS field is rapidly evolving, no warranty or guarantee is made as to the accuracy or completeness of this information.

Typical Cycle for Chemical Exposure and Liability



Societal Need

Global need for substances that are:

- Resistant to heat
- Water repellent
- Oil repellent
- Stain resistant
- Low friction, nonstick

PFAS Developed to Meet Societal Needs

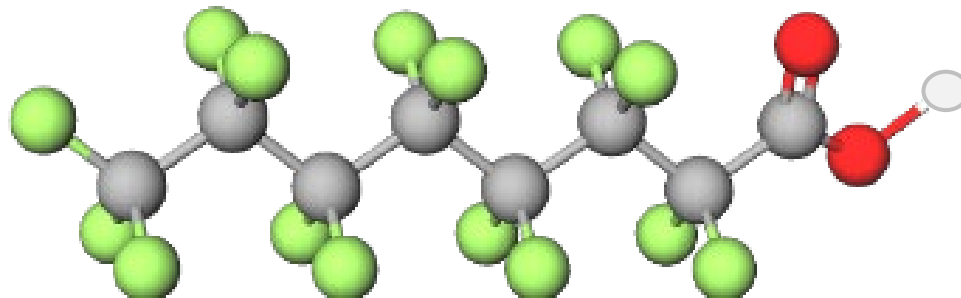
Per- and Polyfluoroalkyl Substances

- Group of manufactured chemicals → No natural source
- Several thousand
- Organic fluorinated
- Chains of carbon-fluorine bonds → Very strong
- Ubiquitous use → Multiple exposure pathways
- Highly mobile
- Some are very stable, and some can chemically transform in air to form stable PFAS
- May fall out from air to water and soil in rain and dry conditions

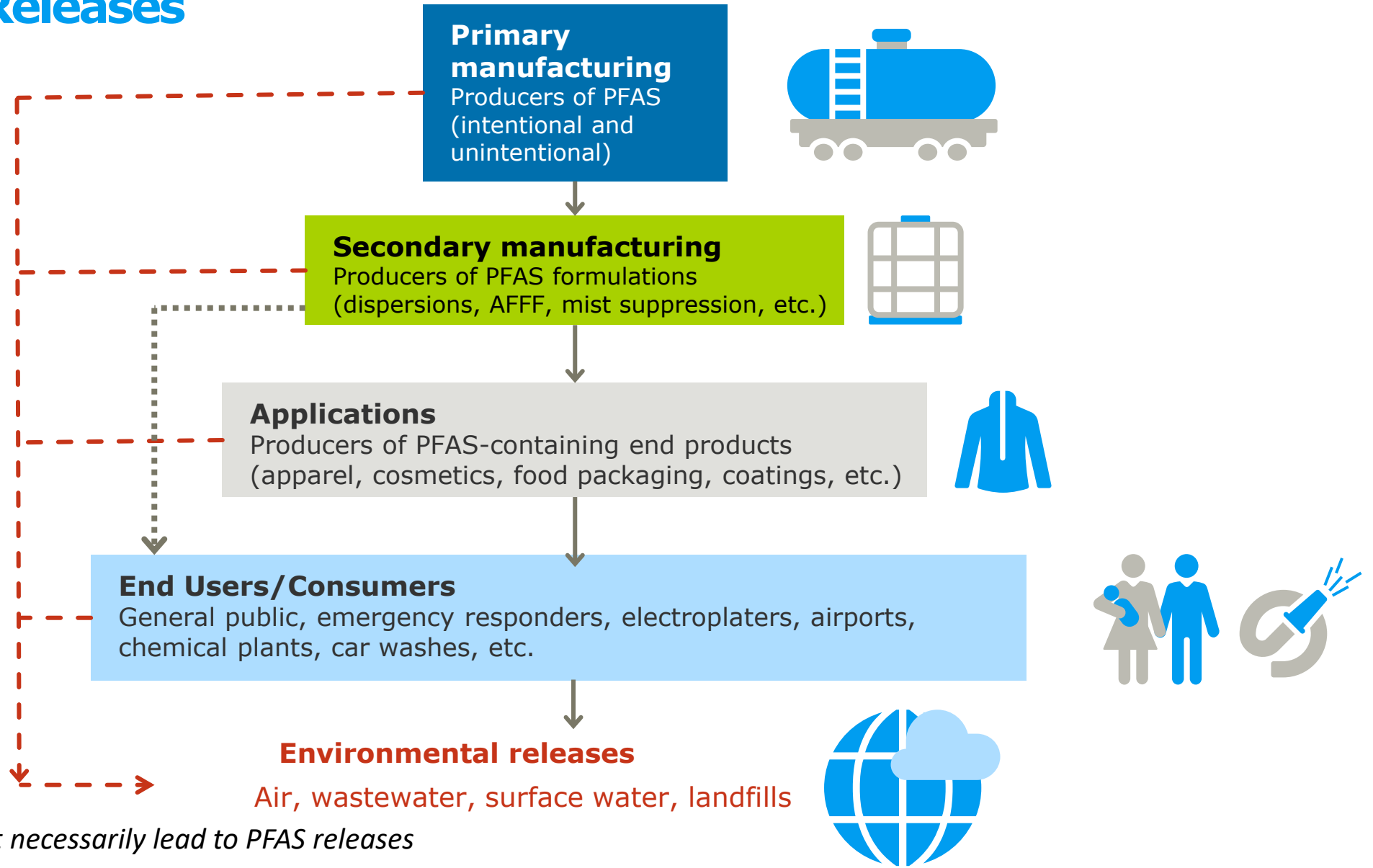


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PFAS Example:
PFOA



Sources and Releases



Note: The sources listed do not necessarily lead to PFAS releases

Potential Impacts to Health and Ecosystems

- Considerable uncertainty in potential impacts as the PFAS science is evolving
- Research is ongoing to determine the extent to which exposure to different PFAS may lead to:
 - cancer, immune system suppression, elevated cholesterol, developmental effects, kidney disease and reproductive effects in people
- Research ongoing to study ecological impacts
- PFAS site contamination may also have a detrimental impact on property values

Policies and Regulations

- EPA has made PFAS a strategic priority
- \$2 billion in Bipartisan Infrastructure Law for emerging contaminants
- CERCLA Superfund Proposed Rule for PFOA and PFOS waste disposal
 - Affects current and historic contaminated sites with limited liability protection
- Safe Drinking Water Act Proposed rule for public water systems to monitor and reduce six PFAS
 - EPA estimates compliance cost of \$1B. The National Water Works Association estimates \$37B
- Toxic Substances Control Act (TSCA) final rule for manufacturers and importers
 - Need to look back to 2011
 - Compliance cost of ~\$800 million
- State regulations

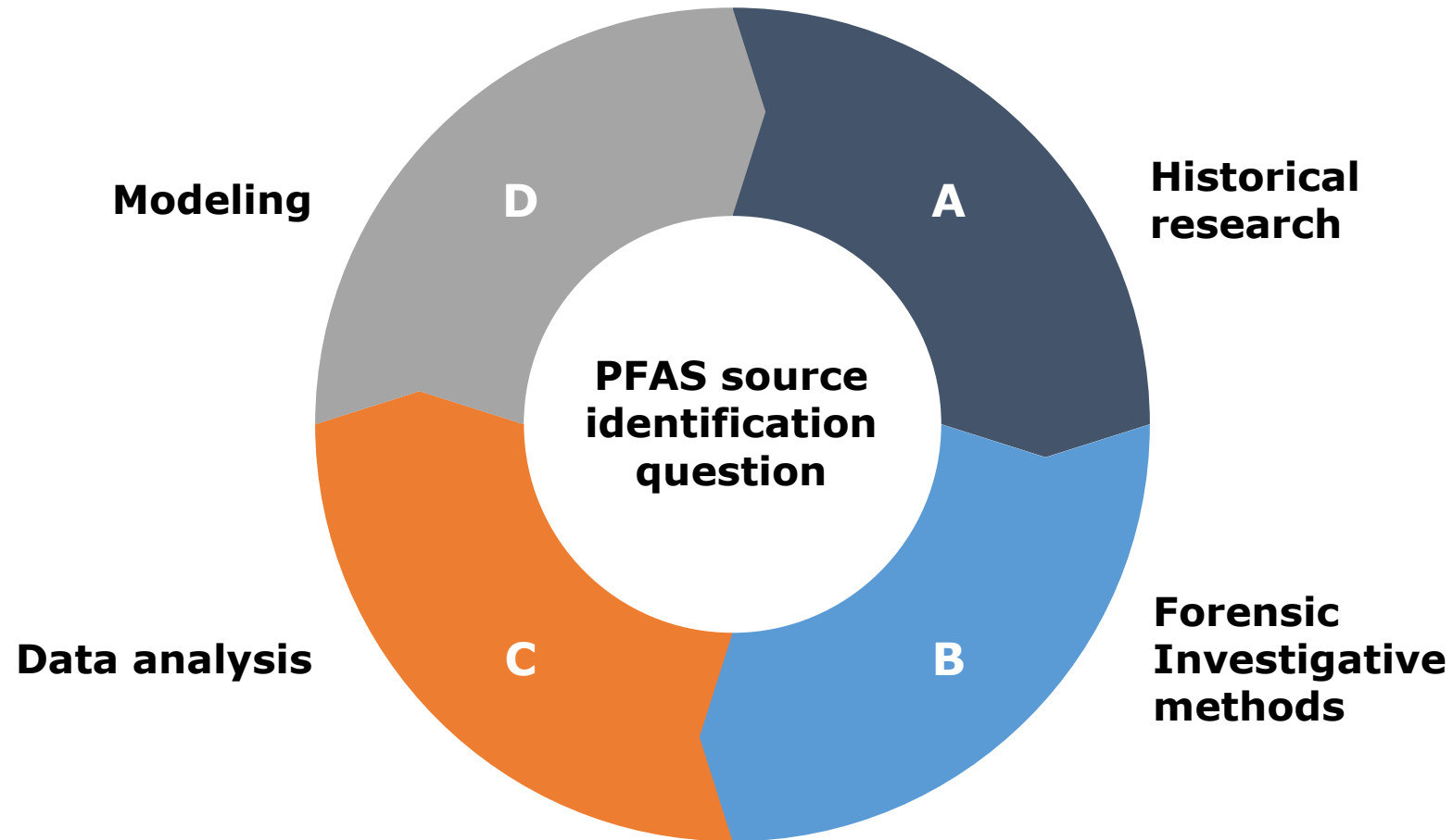
Mitigation or Replacement

- Research ongoing on options for PFAS reduction or destruction
- Example of control: Water treatment with granular activated carbon (approximately \$46 million plus \$3 million per year)
- Some companies are required to provide bottled water to entire communities
- Department of Defense has aside ~\$1B to clean up PFAS at bases
- Minnesota Pollution Control Agency estimates that PFAS purchase cost is up to \$1000 per pound but **\$10 million per pound** to destroy (total >\$14B just in MN)
- Food packaging with PFAS has recently been phased out per EPA
- Substitution from long-chain to shorter-chain PFAS per consent decree with EPA
 - But the production has shifted overseas
 - The shorter-chain PFAS may cause impacts too

Litigation and Enforcement

- Immense scrutiny from environmental NGOs
- Potential litigation targets: Manufacturers, Transporters, Industrial users of PFAS-containing products, Retailers selling products with PFAS coating
- Lawsuits ongoing from water utilities, states, consumer-class actions, etc.
- \$10 B deal with public water providers
- \$1 B agreement with public water systems
- EPA Office of Enforcement has indicated PFAS as an enforcement priority for 2024-2027
- First Clean Water PFAS enforcement action by EPA in 2023

Source Liability Attribution using Multiple Lines of Evidence Approach



Polling Question #1

AM Best estimates ultimate net asbestos losses for the insurance industry at \$100 Billion. Do you think PFAS is the next asbestos?

- a) Yes
- b) No



Polling Question #2

If you think PFAS is the next asbestos, choose the best option for your reasoning:

- a) Water contamination
- b) Public nuisance
- c) Industrial exposure



Polling Question #3

If not, why not?

- a) No signature disease
- b) Pollution exclusions



Q&A



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