




# Biomonitoring Needs to Understand Exposures to Perfluoroalkyl and Polyfluoroalkyl Substances (PFASs) from Consumer Products

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 California Environmental Protection Agency

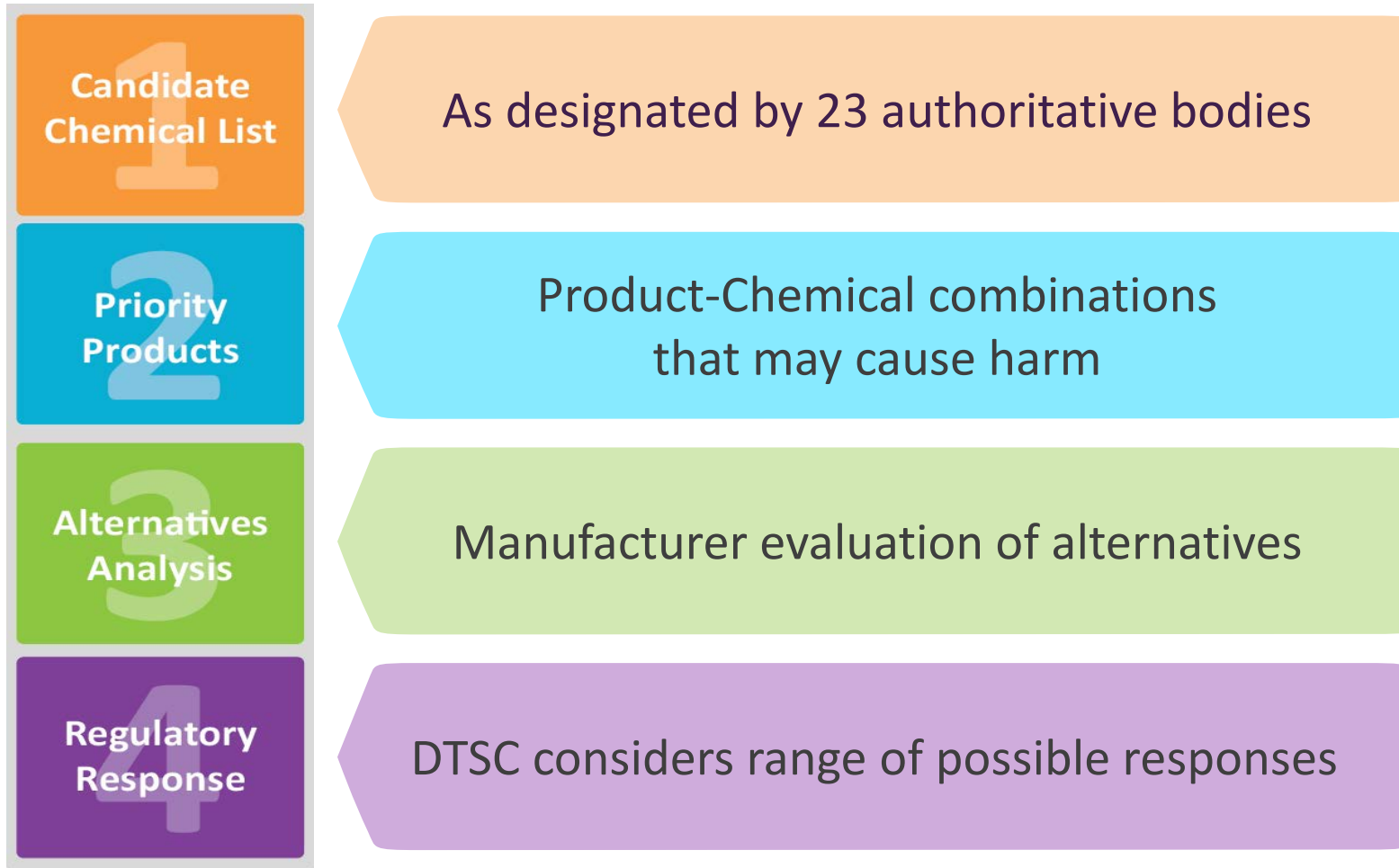
 Department of Toxic Substances Control

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# Safer Consumer Products Regulations

## Cal. Code Regs, Title 22, Division 4.5, Ch. 55



# A Priority Product is a product-chemical combination that meets these criteria:



- There are potential **exposures** to a Candidate Chemical in the product

**AND**

- One or more exposures have the potential to contribute to or cause **significant or widespread adverse impacts**



# Every 3 years, DTSC issues a Priority Product Work Plan that identifies:

- Product categories
- Policy priorities





# Products in all the 2015-2017 Work Plan product categories contain PFASs



Building  
Products



Household/  
Office  
Furniture &  
Furnishings



Cleaning  
Products



Clothing



Beauty,  
Personal  
Care, and  
Hygiene  
Products



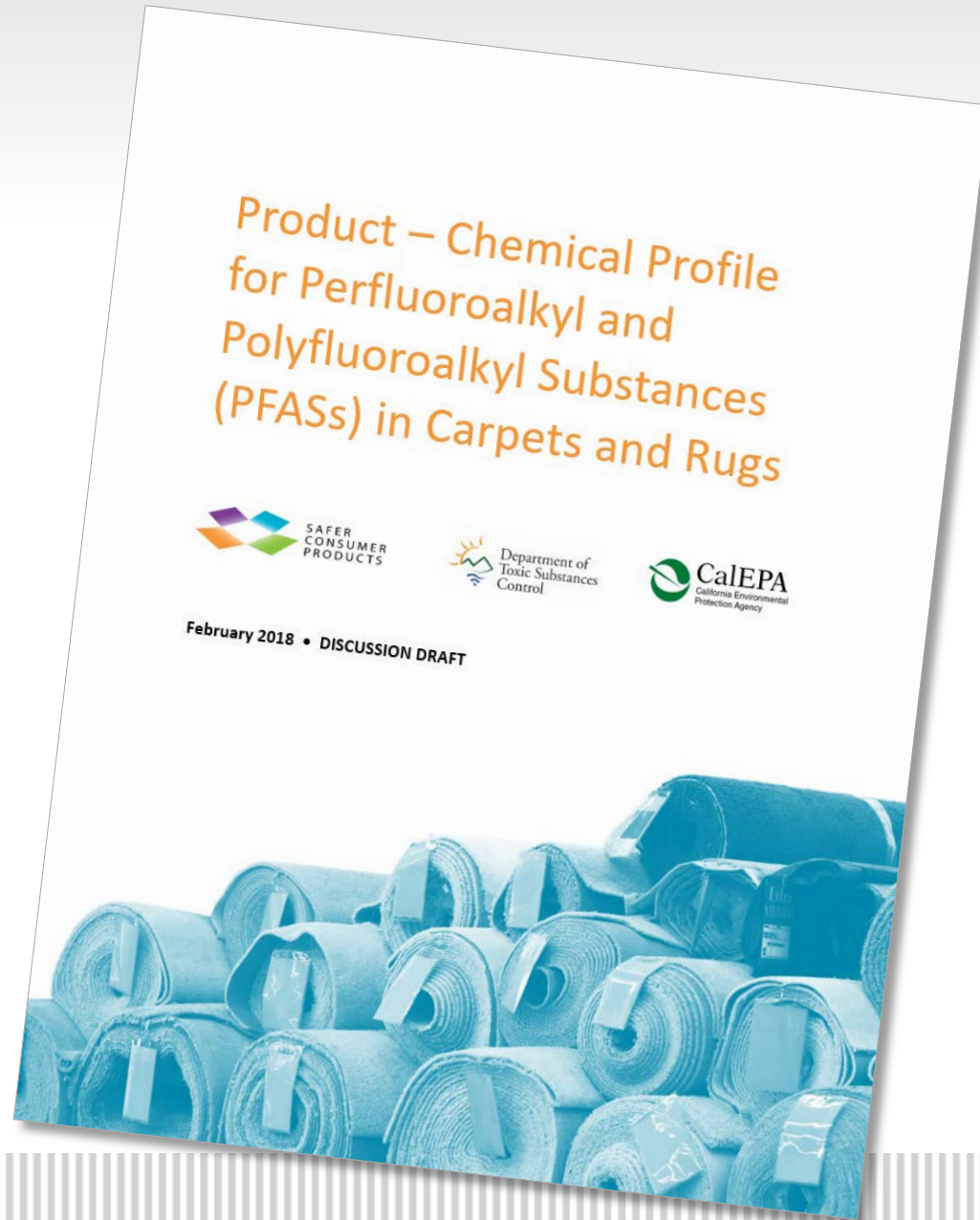
Fishing  
and  
Angling  
Equipment



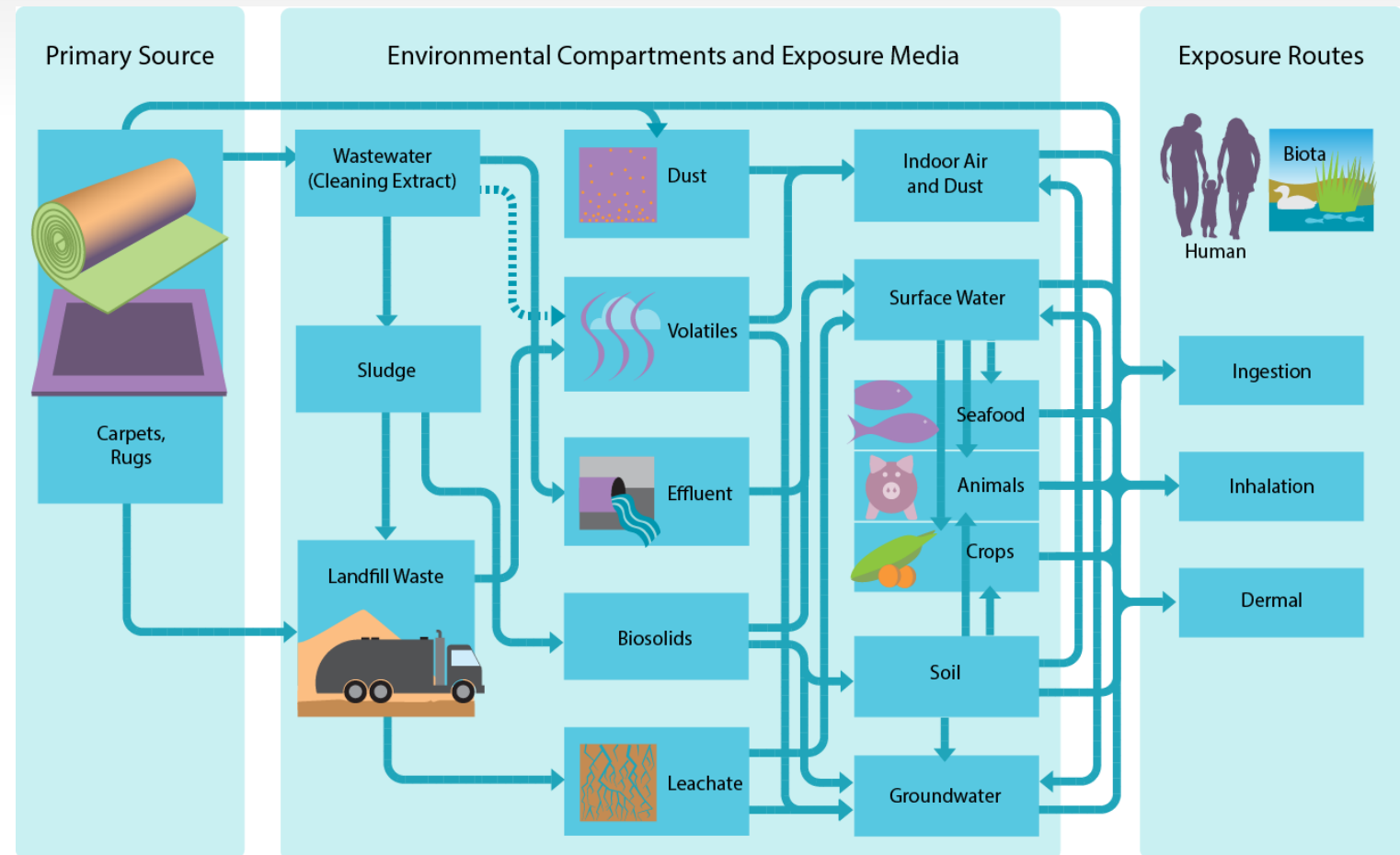
Office  
Machinery  
(Consumable  
Products)



**DTSC is  
proposing to  
regulate  
carpets and  
rugs with  
PFASs**



# Conceptual exposure model



## Some key data gaps

- Publicly-available data limited to perfluoroalkyl acids (mainly longer-chains) and some precursors
- Unclear relationship between PFAS environmental presence, levels in biota and humans, and adverse health impacts
- Unknown effects of exposure to PFAS mixtures
- Unclear relative importance of various PFAS exposure sources





## Potential biomonitoring studies

- Studies on shorter-chain PFASs in different matrices (e.g., whole blood, nails, hair, urine), including intermediate degradation products and metabolites (e.g., 5:3 fluorotelomer carboxylic acid)
- Studies focused on California's most vulnerable and sensitive subpopulations
- Intervention studies before and after removal of specific consumer product sources of PFAS exposure



# Other PFAS-containing products within the 2018-2020 Work Plan

- Beauty, personal care, and hygiene products
- Cleaning products
- Household, school, and workplace furnishings and décor
- Building products and materials used in construction and renovation
- Consumable office, school, and business supplies
- Food packaging

