



# DTSC's Approach on Microplastics

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Department of Toxic Substances Control



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# Disclaimer

This presentation summarizes publicly available information on DTSC's efforts on microplastics, and I have no conflict of interest to disclose.



# Agenda

- Overview of DTSC and Safer Consumer Products (SCP) Program
- Overview of Microplastics, Hazard Traits, and Exposure Potential
- DTSC's Preliminary Research on Microplastics in Consumer Products
- Questions & Answers





# Overview of DTSC and Safer Consumer Products Program



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# Overview of DTSC



Site Cleanup



Hazardous Waste  
Management



Safer Consumer Products

# Green Chemistry in Policy

- 2008 California Green Chemistry Law
  - Health and Safety Code section 25252
- **Safer Consumer Products (SCP) Regulations**
  - Took effect on October 1, 2013
  - CCR Title 22, Chapter 55, Sections 69501 through 69511



# SCP's Mission and Green Chemistry Law Objectives

## Mission

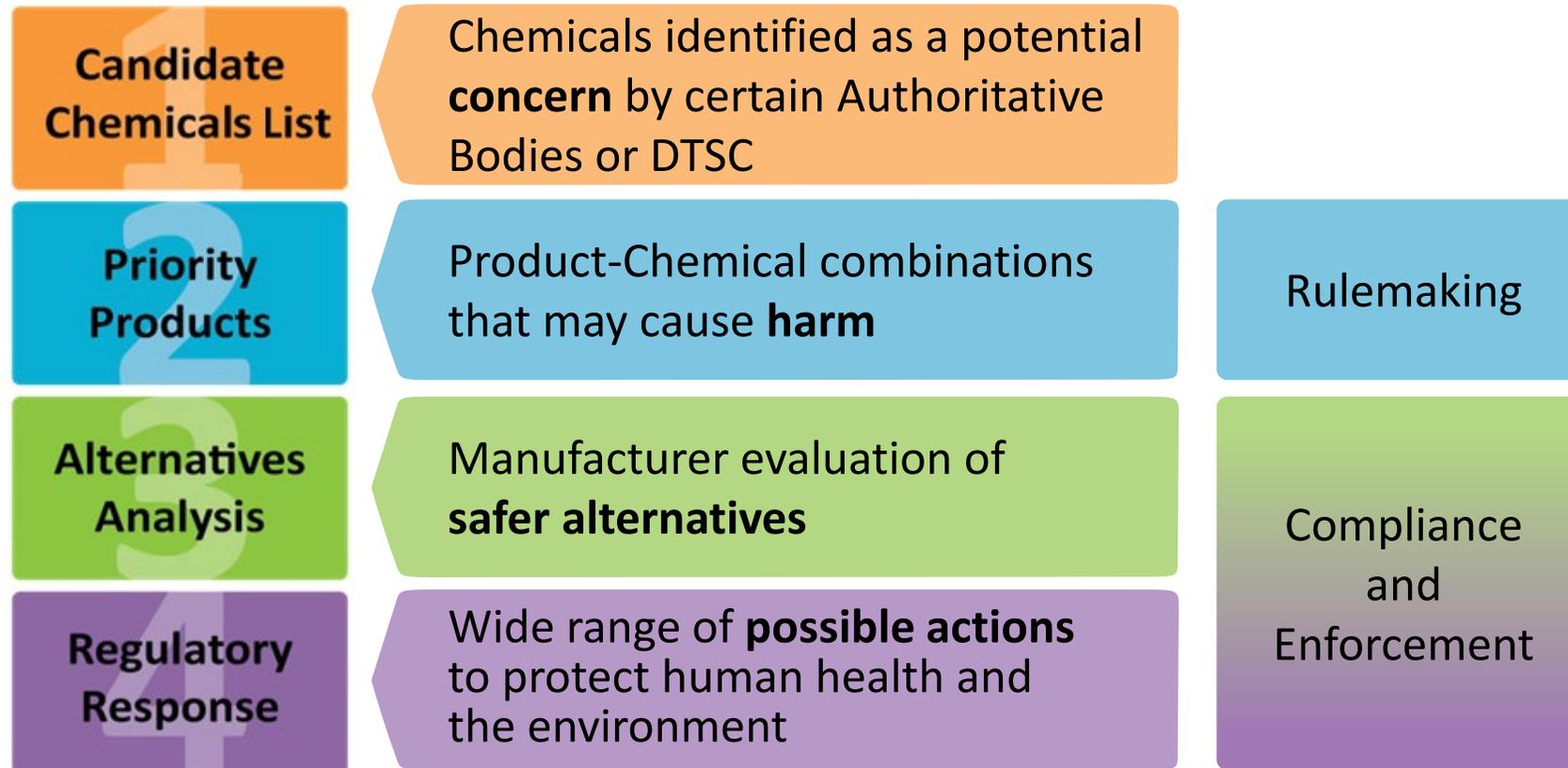
Advance the design, development, and use of products that are **safer for people and the environment**

## Objectives

- Prioritize evaluating **harmful chemicals** in consumer products
- Evaluate **safer alternatives** to harmful chemicals
- Avoid **regrettable substitutes**
- Incentivize **innovation** and search for safer alternatives
- Transparent and **science-based** decision making
- **Enforceable**



# Safer Consumer Products (SCP) Program Framework



SCP website: <https://dtsc.ca.gov/scp/>

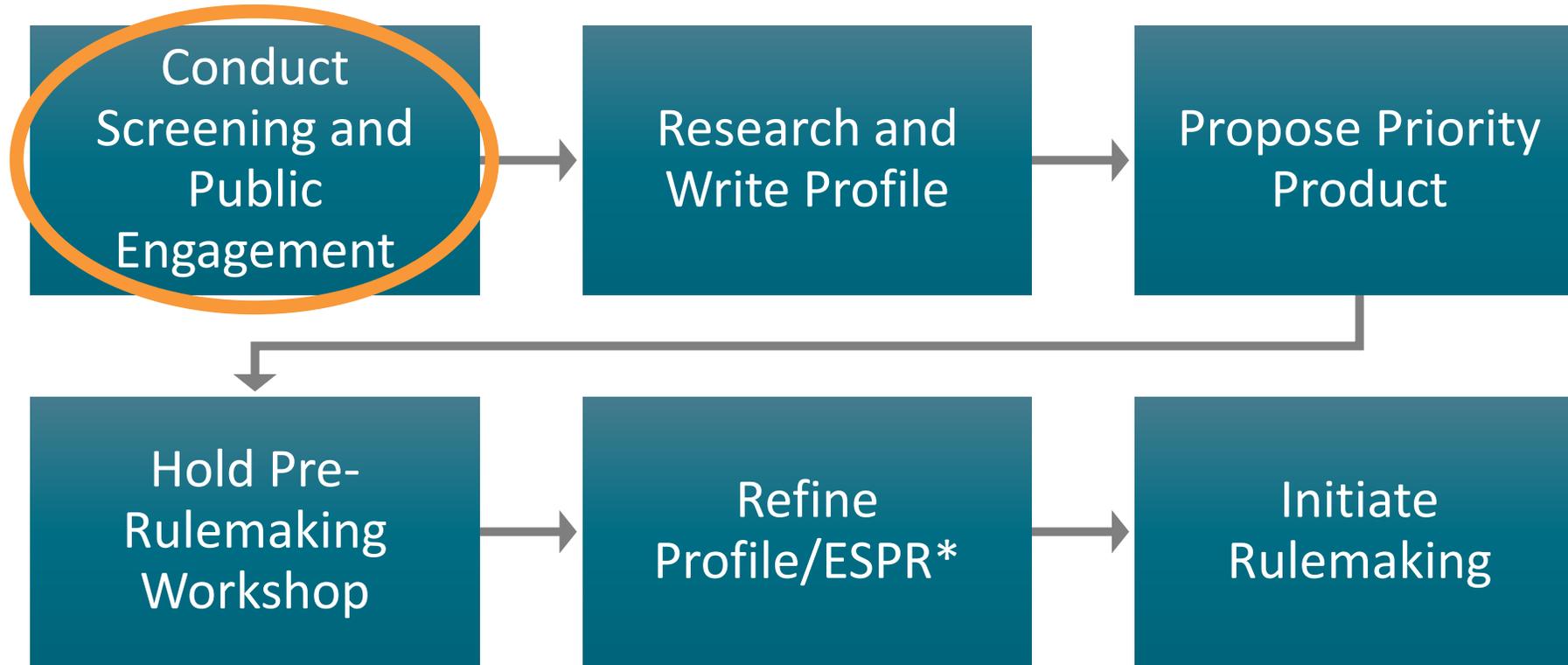
# SCP's Prioritization Principles



- There are potential **exposures** to a Candidate Chemical in the product
- One or more exposures have the potential to contribute to or cause **significant or widespread adverse impacts**



# The Product-Chemical Prioritization Process



\*ESPR: External Scientific Peer Review





# Overview of Microplastics, Hazard Traits, and Exposure Potential



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# DTSC's Focus on Microplastics

**Microplastics** are generally plastics that are **less than 5 millimeters (mm)** in their longest dimension

In **2025**, DTSC initiated a rulemaking to [add microplastics to its Candidate Chemicals \(CC\) List](#)



# Types of Microplastics

Microplastics are categorized as **primary** or **secondary**

**Primary**  
intentionally manufactured



microbeads in  
toothpaste



nurdles

**Secondary**  
fragmentation of larger plastics



tire wear  
particles



plastic bottle  
fragments

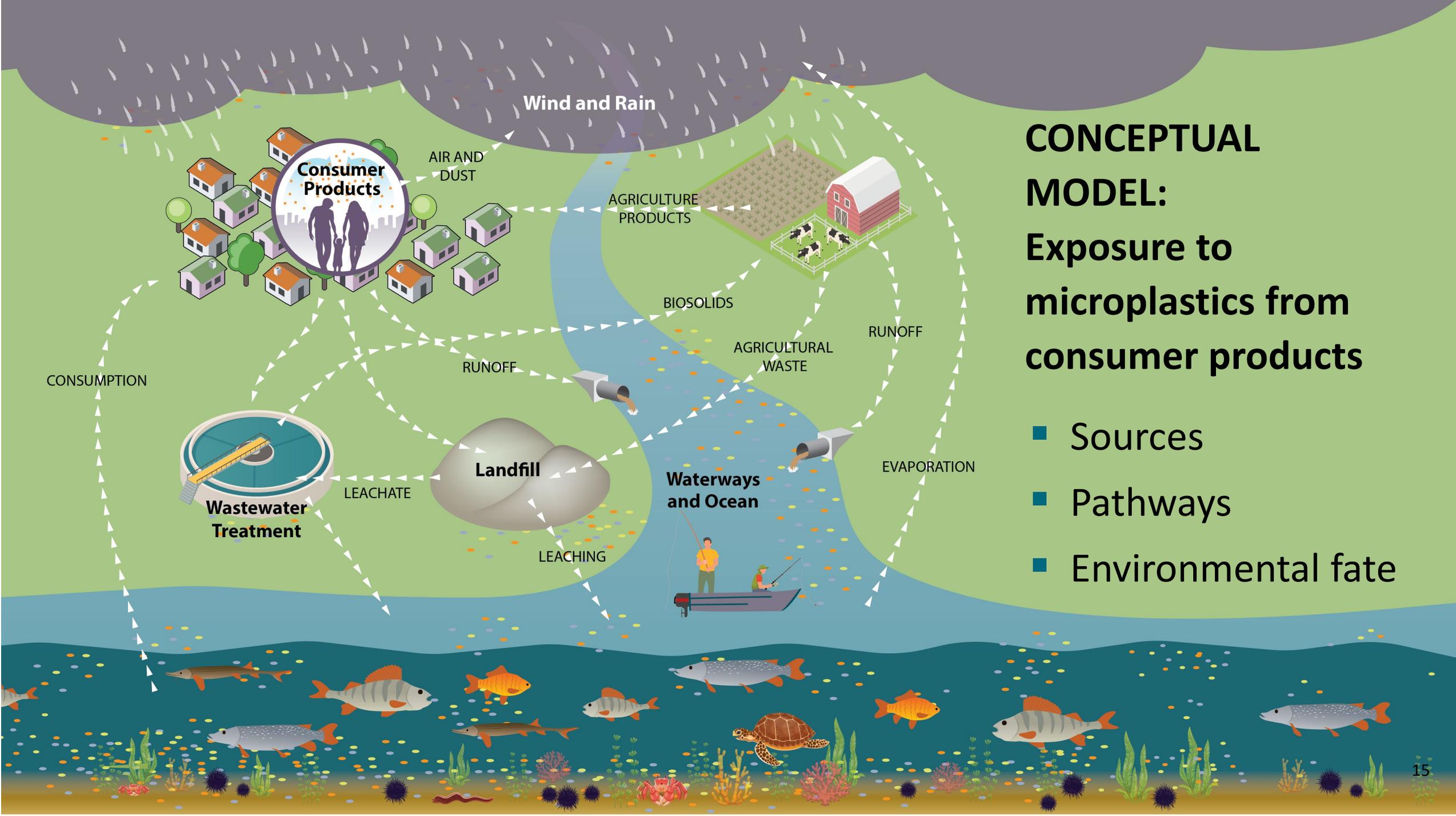
Source: [ITRC Microplastics Guidance Document web-based training](#)



# Hazard Traits of Microplastics

- Environmental persistence
- Mobility in environmental media
- Additional hazard traits
  - carcinogenicity
  - neurotoxicity
  - respiratory toxicity
  - dermatotoxicity
  - wildlife impairment





**CONCEPTUAL MODEL:  
Exposure to microplastics from consumer products**

- Sources
- Pathways
- Environmental fate

# Why are we concerned about microplastics?

- Persistent, mobile, and widespread in the environment
- Consumed by humans and animals and taken up by plants
- Have adverse health impacts on humans and other organisms



# Potential for Human Exposure

- Inhaled from outdoor and indoor **air**
- Ingested from **drinking water, food, and beverages**
- Dermal exposure via contacting products with microplastics and from **household dust**



# Potential for Human Health Adverse Impacts

- Human health impacts are currently being studied
- Detected in **human blood, lungs, placentas, testes, breast milk, and stool samples**
- Vulnerable populations include **children, pregnant people, and workers**



# Potential for Environmental Impacts and Wildlife Exposure

- Detected in **every ecosystem, air, water, and soil**
- Wildlife can mistake microplastics for food
- Microplastics can transfer through the food chain
- Plants can uptake microplastics from water and soil



# Potential for Wildlife Adverse Impacts

Exposure to microplastics can cause

- Physical stress and damage
- Changes in gut microbiota
- Inflammation
- Oxidative stress
- Immune responses





# DTSC's Preliminary Research on Microplastics in Consumer Products



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# DTSC's Product Screening Research Rationale

- DTSC's 2024-2026 Priority Product Work Plan
  - **Policy Priority:** Reducing release of microplastics
  - **Product Category:** Products that contain or generate microplastics
- Early stages of evaluating products that can generate microplastics

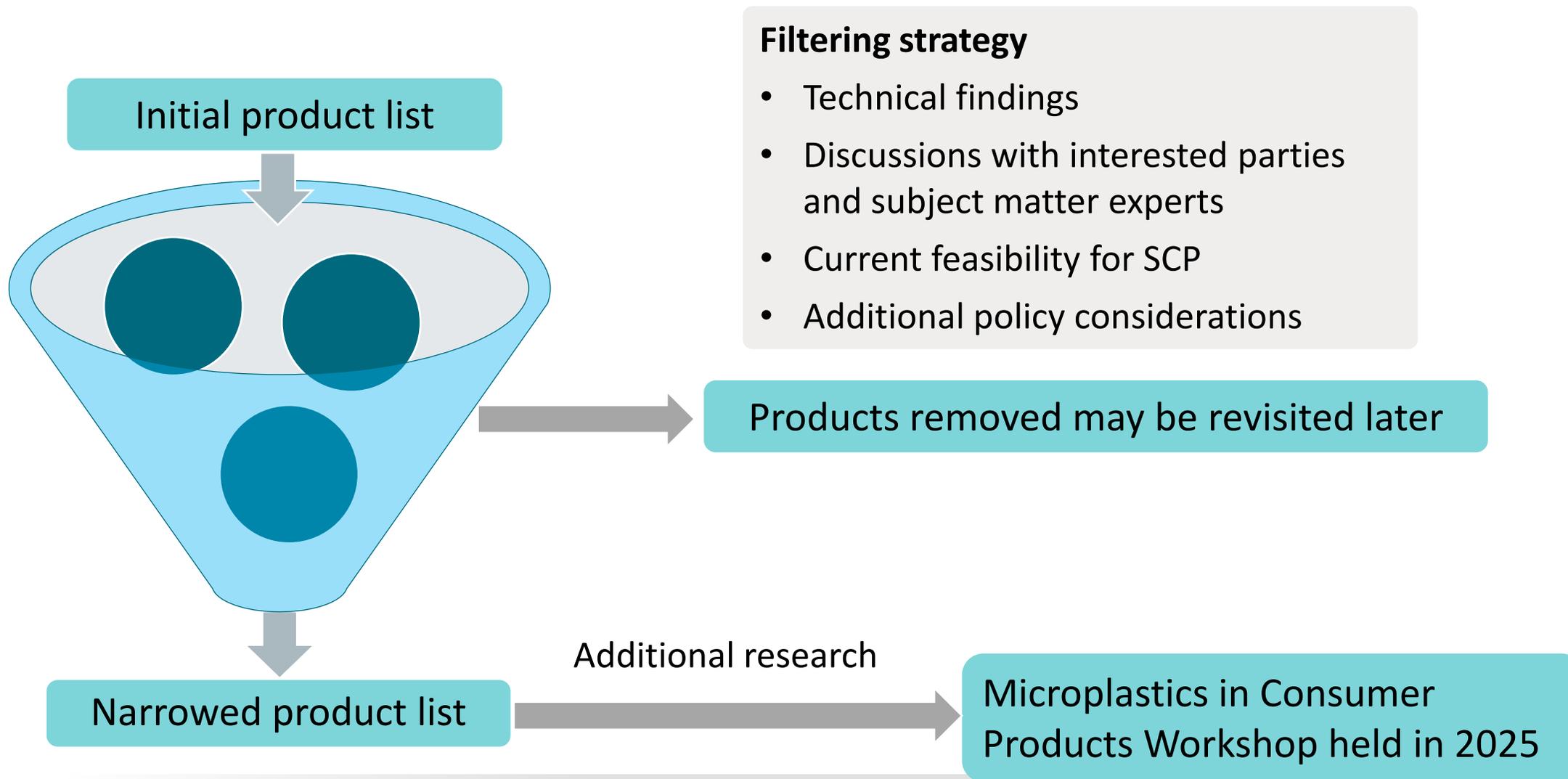


# Engagement with Subject Matter Experts

- Reviewed regulations and work done by other government agencies
  - Ocean Protection Council's Statewide Microplastics Strategy
  - CalRecycle's Plastic Pollution Prevention and Packaging Producer Responsibility Act
  - European Union Commission Regulation (EU) 2023/2055
- Consulted with industry, government agencies, academia, and NGOs



# Path to Workshop



# DTSC's Background Document and Public Workshop on Microplastics in Consumer Products

- In 2025, DTSC released a [background document](#) and held a [public workshop](#)
- Summarize
  - preliminary screening research findings on microplastics in consumer products and
  - types of products we evaluated
- Gather feedback via [public comment period](#)



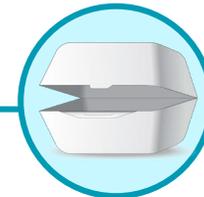
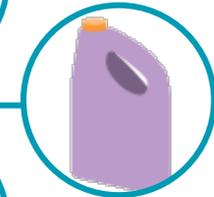
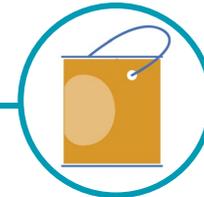
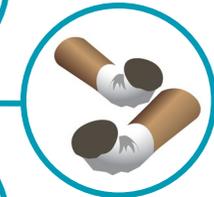
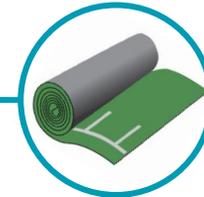
# Product Categories Identified for Screening Research

- Agricultural products
- Aquaculture and fishery products
- Artificial turf
- Beauty, personal care, and hygiene products
- Building products, construction/renovation materials
- Cigarette filters
- Cleaning products
- Food Contact Articles
- Furniture
- Glitter
- Motor vehicle parts, accessories, and repair materials
- Nurdles
- Personal protective equipment
- Floral products
- Synthetic textiles
- Toys



# Narrowed List of Products

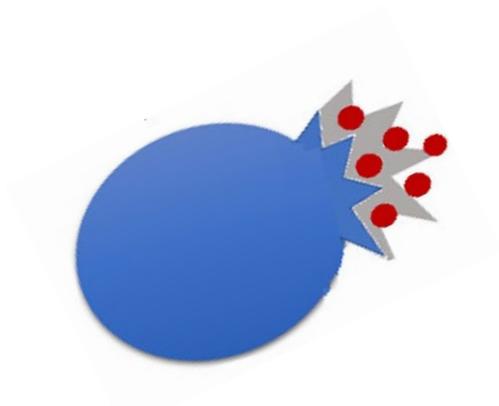
- Artificial turf infill
- Children's toys containing primary microplastics
- Plastic film mulch
- Single-use cigarette filters
- Water-based interior wall paints
- Cleaning products
- Food contact articles



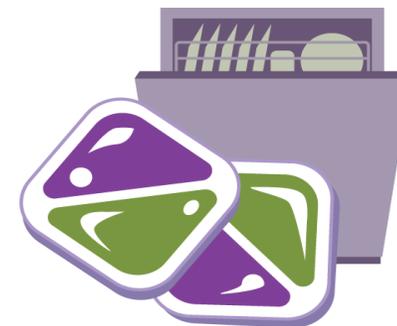
# Types of Cleaning Products



**Intentionally added polymers  
in laundry and dishwashing  
detergents**



**Polymeric fragrance  
microcapsules in laundry  
detergents and fabric softeners**



**Water-soluble polymers in  
laundry and dishwashing  
detergent pods**



# Types of Food Contact Articles



Plastic beverage bottles and caps



Plastic baby feeding bottles



Plastic wrappers for snacks and candy



Plastic cling wraps and films



Polystyrene foam foodware



Plastic tea bags

# Key Takeaways

- Many consumer products contain or generate microplastics
- Microplastics are persistent, mobile, and widespread in the environment
- Potential for human and wildlife exposure
- Potential for adverse impacts to humans, wildlife, and the environment
- Ongoing research on safer alternatives



# Next Steps

- Review public comments
- Determine if additional research is needed
- Potentially list products that contain or can generate microplastics as Priority Products via rulemaking



# Data to Inform Next Steps

- Source of microplastics
  - Polymer types
  - Product types
- Human exposure routes



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# Questions & Answers

## Questions

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