

# Washington Toxics Reduction Strategy Group Meeting #3

## Priority Toxics- 11/15/2012

*This document describes Washington State's current approaches to prioritization of toxic chemicals for additional actions to protect human health and the environment.*

This paper focuses on identifying priorities in three areas: (1) protection of children, (2) protection from persistent, bioaccumulative toxics (PBTs), and (3) protection of Puget Sound and other water bodies. Each of these prioritization approaches is discussed further below.

### **1. Identifying Priorities to Protect Children: the Children's Safe Products Act List of Chemicals of High Concern for Children**

The Children's Safe Products Act (CSPA) required the Department of Ecology (Ecology) to identify chemicals of high concern for children (CHCCs) based on toxicity and exposure criteria in the law. The list of CHCCs was the result of a prioritization of about 2,000 chemicals that other government agencies had already identified as being of concern (i.e., a list of lists). Ecology focused on chemicals that were particularly concerning for children and where there was at least some evidence of potential exposure. The final list includes 66 chemicals of high concern for children. The prioritization process included the following steps.

A. The first step involved identifying chemicals that met the toxicity criteria in the law.

**High Priority Chemicals' (HPCs):** (From legislation)

**Section 2: Definitions**  
**'High priority chemical' as identified by:**

- State agency
- Federal agency
- Accredited research university
- Other scientific evidence deemed authoritative by Ecology

**One or more of the following criteria:**

- a) Developmental toxicant
- b) Cause:
  - Cancer
  - Genetic damage
  - Reproductive harm
  - Endocrine disruptor
- c) Damage:
  - Nervous system
  - Immune system
  - Organs
  - Other systemic toxicity
- d) PBT
- e) vPvB (very persistent & very bioaccumulative)

**HPCs  
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B. The second step involved identifying chemicals that met the criteria for potential exposure.

**Potential Exposure Sources:** (From legislation)

**Section 4:**  
Identifying high priority CHCCs after considering a child's or developing fetus's potential for exposure to each chemical.

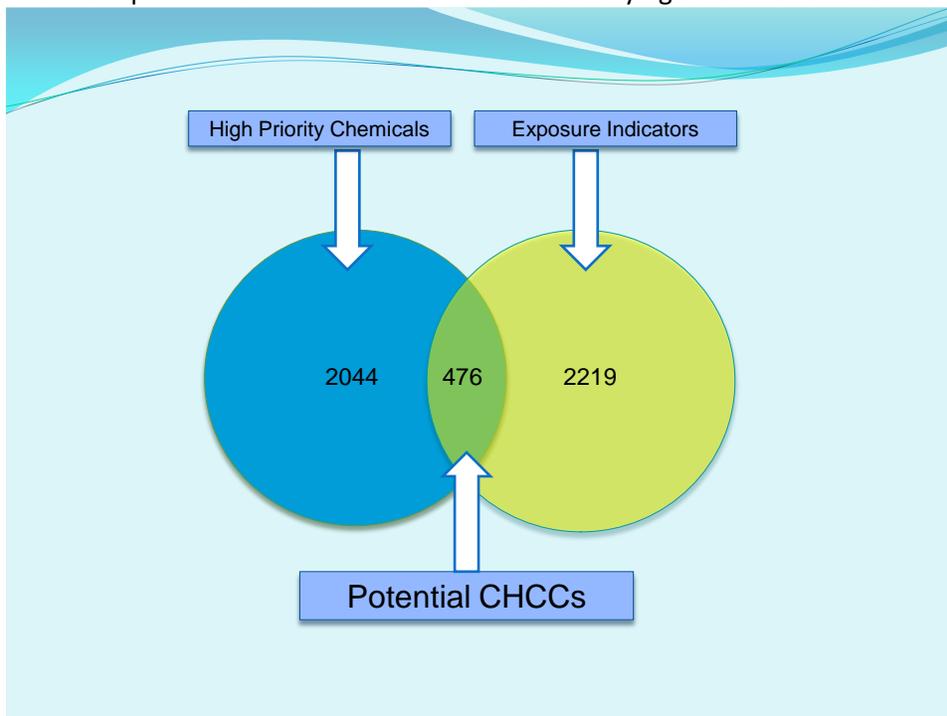
One or more of the following criteria:  
Chemicals found in biomonitoring studies:

- a) **Humans**
  - Umbilical cord blood
  - Breast milk
  - Urine
  - Other bodily tissues or fluids
- b) **Chemicals found in:**
  - Household dust
  - Indoor air
  - Drinking water
  - Elsewhere in the home
- c) **Added or present in consumer product used or present in the home**



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C. The overlap of these two efforts was the first identifying screen for CHCCs:



D. This first screening resulted in a list of 476 chemicals. Additional screening was necessary to identify "about 50" (due to resource limitations) chemicals of high concern for children from that list of

potential CHCCs that were identified based on the toxicity and exposure screens discussed above. Chemicals were then eliminated based on the following criteria:

- **Overlapping regulatory frameworks:** Ecology eliminated some chemicals because, at the time of the evaluation in 2009, it was believed they were already regulated such that additional information about their use in children's products would be somewhat redundant. Ecology wanted to focus on obtaining information about use of less-regulated chemicals in children's products.
- **Combustion by-products:** Many of these chemicals are of concern for children but they are generated by incomplete combustion. Ecology assumed that most children's products do not involve combustion.
- **Emerging chemicals:** These chemicals are not necessarily new, rather, they are those chemicals that scientific literature indicates are toxic, but no authoritative body (such as the International Agency for Research on Cancer) has yet evaluated. One example is the flame retardant chlorinated tris (TDCPP). Ecology did not include this chemical in the original list of CHCCs because while there were a number of studies that demonstrated its toxicity, no authoritative outside body had yet assessed the state of knowledge. In 2012, California, under their Prop 65 statute, identified TDCPP as a carcinogen. If the list was being created today, TDCPP would be included as a CHCC.
- **Chemicals with primarily ecological toxicity:** These are chemicals where toxicity is well defined for environmental endpoints but not human health. This prioritization process focused on identifying toxics of particular concern to children's health.

Final toxicity screening included consultation with University of Washington's Pediatric Environmental Health Specialties Unit to develop a weight of evidence approach that focused on three toxic endpoints particularly important to children:

- Carcinogenicity
- Reproductive toxicity
- Endocrine disruption

With this input from the University of Washington, Ecology was better able to identify the chemical substances that were likely to pose the greatest risks to children in terms of cancer, reproductive toxicity, and endocrine disruption.

The last step involved screening for the potential for exposure. To do this, Ecology identified chemicals that were known to be present in children's products or were found in people through biomonitoring. The final list includes 66 chemicals that met the screens for toxicity and potential for exposure. The list is available at <http://www.ecy.wa.gov/programs/swfa/cspa/chcc.html>. Manufacturers of children's products began notifying Ecology of their use of these chemicals in August 2012. Ecology's intent is to evaluate the reported information to identify if additional actions are needed to reduce or prevent exposures to chemicals in children's products. This evaluation will be based primarily on degree of hazard and prevalence of the chemical in children's products. The phased-in nature of the notification requirements means that Ecology does not expect to have sufficient data for this evaluation until at least the summer of 2013.

#### Current Priority Actions for Children

Actions currently underway are focused on enforcing the reporting requirements of CSPA, including product testing. Ecology also received a petition to add a chemical flame retardant (chlorinated tris – see example above) to the list of CHCCs. This rule making is planned for winter/spring 2013.

As resources allow, Ecology and Washington State Department of Health (DOH) staff support local health departments in their efforts to address elevated blood lead levels in children.

#### Additional Work Needed for Children

The reported data need to be evaluated to determine if additional actions are warranted to protect children. On an ongoing basis, as resources allow, Ecology will update the list of CHCCs.

## **2. Identifying Priorities to Protect People and the Environment from Persistent, Bioaccumulative and Toxic Chemicals**

PBTs are the legacy chemicals we are most likely to find at cleanup sites and in our bodies—they are often called the “worst of the worst” chemicals. After the PBT rule was adopted in 2006,<sup>1</sup> Ecology and DOH worked together to prioritize which of the 27 chemicals/chemical groups on Washington’s PBT list require a Chemical Action Plan (CAP). The rule specified that the following criteria be used in this prioritization process.

- **Relative ranking:** the relative ranking assigned to each PBT based on Ecology's evaluation of information on the chemicals in eight categories:
  - Persistence characteristics.
  - Bioaccumulation characteristics.
  - Human health toxicity.
  - Ecological toxicity.
  - Uses in Washington.
  - Releases in Washington.
  - Levels present in the Washington environment.
  - Levels present in Washington residents.
- **Opportunities for reductions:** whether there are opportunities for reducing or phasing out uses, production or releases of the PBT.
- **Multiple chemical releases and exposures:** scientific evidence on the combined effects of exposure to one or more PBTs and other substances commonly present in the Washington environment.
- **Sensitive population groups and high-exposure populations:** scientific evidence on the susceptibility of various population groups, including the timing of the exposure and the cumulative effects of multiple exposures.
- **Existing plans or regulatory requirements:** whether there are existing plans or regulatory requirements to reduce releases of PBTs.

Based on this evaluation, three chemicals were initially identified as priorities—lead, polycyclic aromatic hydrocarbons (PAHs) (these are by-products of incomplete combustion), and perfluorooctane sulfonates (PFOSs) (chemicals added to materials to aid in water resistance).

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<sup>1</sup> The PBT rule is available at <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-333>

Before the rule and prioritization process were in place, Ecology had already completed CAPs for mercury and polybrominated diphenyl ethers (PBDEs- a type of chemical flame retardant). The CAP for lead was completed in 2009 and the CAP for PAHs will be finalized in 2012. Most of the key recommendations for the completed CAPs have been achieved.

#### Current Priority Actions

Recently, Ecology amended the priority schedule to address PCBs next, rather than PFOS. PCBs are a significant issue for a number of programs in the agency, especially cleanup and water quality. The PCB CAP will be followed by another prioritization exercise including a decision about whether or not the list of PBTs should be updated first.

#### Additional Work Needed for PBTs

Remaining key CAP recommendations still needing to be done include:

- Lead: Programs to address lead paint in older homes, which is the largest source of ongoing lead exposure for children
- PAHs: Engine idle-reduction rule, as exhaust is a major source of PAHs

Ecology has requested additional funding to address the following PBT priority issues:

- Reduce sources of PCBs in Spokane River: These funds would jump-start activities already planned, but not funded, to find and eliminate sources of PCBs to the river. Actions to address this issue include:
  - Implement toxics management plans to control PCB sources in the affected basin
  - Identify safer alternatives to chlorinated solvents used to make inks and dyes to eliminate a new source of PBTs
  - Test other products such as motor oil and caulking materials for PCBs
- Assess more homes for the presence of lead hazards: Lead paint in older homes remains the largest single source of lead poisoning for children and is entirely preventable with routine home maintenance and with proper care during remodeling. Children are much more susceptible to lead exposure, especially at low levels, than adults, and the impacts are permanent (e.g. loss of IQ). Actions to address this issue include:
  - Bridge funding to support the DOH Healthy Homes Initiative, which includes a larger emphasis on identifying potential lead paint hazards in homes
  - Provide funding to the Department of Commerce to assess more homes for lead hazard. Commerce already has a federal grant from Housing and Urban Development (HUD) to pay for remediation of lead hazards in low income housing.

### **3. Identifying Priority Actions to Protect Puget Sound**

Ecology and other agencies initiated the Puget Sound Toxics Loading Analysis (PSTLA) in late 2006 to provide scientific information that could be used to guide decisions about how best to direct and prioritize resources and strategies for controlling toxic chemicals in the Puget Sound basin. The primary focus of PSTLA was to estimate toxic chemical loading to Puget Sound through major pathways such as

surface water runoff, publicly-owned treatment works (POTWs), and direct air deposition. The PSTLA evaluated loadings for 17 chemicals of concern that were selected based on:

- Documented history of their presence in the Sound
- Capacity to harm or threaten the Puget Sound ecosystem
- Need to ensure that a broad variety of delivery pathways would be represented.

While a much larger number of potentially harmful chemicals are released to the Sound, the identification and evaluation of all these chemicals was too resource intensive to tackle.

Ecology then identified those chemicals that affect the whole basin:

- Copper
- PAHs
- DEHP (phthalates)
- Petroleum

Ecology identified priorities for action for copper, PAHs and petroleum. Ecology may prioritize phthalates for reduction, pending completion of ongoing work by the federal government (including identifying safer alternatives). Source control actions are prioritized over other actions based on toxicity and the potential for harm to the ecosystem and opportunities for source reduction.

#### Current Priority Actions for Puget Sound

1. Reducing copper in surface waters – Actions underway include:

- Better brake rule to reduce copper and asbestos in brake pads which are a significant source of copper to water. This rule was adopted on October 18, 2012.
- RCW 70.300 bans the use of copper based boat paints as of January, 2018. Boat paint is another significant source of copper.
- Research on roofing materials to refine/confirm the Toxics Assessment conclusion that roofing is a significant source of copper and other metals (National Estuary Program [NEP] funding is supporting the initial study).
- Research on copper in pesticides used in residential settings (NEP funding provided to Department of Agriculture).

2. PAHs- including the PAH CAP recommendations

- Continue/expand wood smoke reduction activities – a significant source of PAHs to Puget Sound. NEP funding is being used to supplement this program.
- Remove creosote pilings as opportunities arrive-NEP funding has been awarded to DNR to continue its program to identify and remove derelict pilings.
- Engines- continue/expand current programs to reduce emissions, especially diesel.

3. Petroleum drips and leaks

- Workshops to help car owners repair drips and leaks

- Education and outreach

#### Additional Work Needed for Puget Sound

Ecology has requested funding to conduct hazard assessments for alternatives to copper based boat paints. This work will fulfill a requirement of the new law and build on the work already done by EPA in support of copper reduction actions taking place in California to protect San Diego Harbor.

Diesel emissions are the highest priority air toxic. We've had a lot of success in retrofitting the public fleet, but much work remains (and tools are limited) to address the private fleet of diesel engines.